

# **EFFECTS OF VIDEO SELF-MODELLING AS AN INTERVENTION FOR TEENAGERS WITH PUBLIC SPEAKING ANXIETY**

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A thesis submitted in partial fulfilment of the requirements for the

Degree of

Master of Arts in Child and Family Psychology

University of Canterbury.

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2013

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## **Acknowledgements**

Several people have contributed in a variety of ways in the production of this thesis.

Firstly, I would like to give my thanks to my supervisors, Mr Lawrence Walker and Associate Professor Karyn France. They have shared their expertise and given me guidance and support unreservedly.

I would also like to thank my family; Mum, Dad, Jack and Annie; my extended family, and my friends for helping to keep me sane, and everyone at Wheki 251 for making me smile at the office every day.

Lastly, I would like to thank the principal, staff, parents and students involved in the study. Without their participation this study would not have been possible.

## **Abstract**

Public Speaking Anxiety (PSA) arises from the real or anticipated performance of an oral presentation. People with PSA experience an increase in Heart Rate (HR), negative self-focused thoughts and observable behaviours such as, trembling or non-fluent speech. In this study Video Self-Modelling (VSM), an intervention based on observational learning, was used to increase performance fluency and decrease cognitive, behavioural, and physiological anxiety. Ten high school students with high PSA participated from an English class in a New Zealand school. Video self-models were created for each student through editing to depict confident speaking and then viewed by the students 5 to 8 times over a fortnight. Results indicated from pre-intervention to post-intervention that all students decreased their level of behavioural anxiety. Seven of the ten students decreased their level of self-reported speech anxiety and six students self-reported more positive thoughts about public speaking. There was a decrease in HR for two of the four students, who wore HR monitors during the study. These results suggest that VSM could be used as an intervention, within a high school setting, to reduce anxiety and improve public speaking performance.

## CHAPTER 1: Introduction and Literature Review

Public speaking is an essential life skill. Effective public speaking skills enable people to express their ideas and communicate clearly with others; however, the public performance aspect of this activity renders it as high-anxiety producing activity for most adolescents. Schools provide extra support services to help promote the physical and social well-being of their students and they can make good use of intervention programmes. Evidence-based interventions not only assist in accelerating the learning processes, but schools can also use these interventions to enhance self-esteem and reduce anxiety. A number of peer support and anti-bullying intervention programmes, *Decision-making, Assertiveness, Responsibility and Esteem* (DARE), *Kia Kaha*, and *Victory over Violence*, are already operating in schools around New Zealand.

An important consideration when choosing an intervention is the intervention's level of intrusiveness into the student's routine and privacy. In particular, any attempt to introduce an intervention to a school setting requires a low level of intrusiveness. Research indicates that Video Self Modelling (VSM) is an unobtrusive, time efficient, and rapid learning intervention tool, which can be used in schools and in classrooms, but it is currently underutilized (Buggey, 2007; Collier-Meek, Fallon, Johnson, Sanetti & Delcampo, 2012; Kehle, Bray, Byer-Alcorace, Theodore & Kovac, 2012).

This study researches the use of VSM for reducing Public Speaking Anxiety (PSA) and increasing the quality of public speaking performances in adolescents.

Video Self Modelling is a cognitive-behavioural technique that provides visual images of the self as a model displaying desired specific behaviours. The intervention involves the individual being recorded during a public speaking activity. The video recording is then edited with the aim of keeping the most desirable behaviours and eliminating less desirable



ones such as pausing, sniffing, stuttering or repetitions. The student then watches the edited video showing their performance in a much more favourable light, a number of times. The aim of this is to increase the student's confidence in their own public speaking ability, reduce their anxiety about their performance and encourage imitation of those more desirable behaviours in future public speaking performances.

Only a small number of studies have used VSM as an intervention to enhance speaking ability and only one published study by Richards-Schlichting, Kehle and Bray (2004) to date has used Self-Modelling (SM) as an intervention with high school students to enhance their speaking ability and decrease their PSA.

A large number of studies have used interventions for anxieties or phobias but most have relied heavily on measures of self-report. A study by Heeren, Reese, McNally and Philippot (2012) used attention training as an intervention by attending toward and away from social threat to assess not only self-reported social anxiety, but also behavioural and physiological measures of social anxiety. A speech task to assess self-reported, behavioural and physiological responses was administered at baseline and post-training, however, the physiological response was solely skin conductance and it was suggested that Heart Rate (HR) and cortisol release be used in further studies (Heeren et al., 2012). A similar study by Van Bockstaele et al. (2011) did use HR and skin conductance measures in their study of attention training as an intervention for people with spider phobia, and they did not find any significant effects on skin conductance or HR in response to pictures of spiders (Van Bockstaele et al., 2011).

The current study reported here aims to measure public speaking anxiety through behavioural observations, using HR as a physiological measure of arousal, and two self-report instruments, the Personal Report of Public Speaking Anxiety (PRPSA) and the Self-

Statements during Public Speaking (SSPS) that aim to measure the self-perception of performance in the public speaking domain. The aim of this research study is to decrease anxiety through the use of VSM and improve public speaking performance, through the use of VSM, for teenagers. Through the student's involvement in the VSM intervention, it is possible that they will judge themselves capable of handling a public speaking situation that they might otherwise have avoided.

The two main objectives of this study are to investigate whether video self-modelling, used with teenagers who experience public speaking anxiety:

1. Increases performance fluency (measured by a decrease in the number of vocalised pauses, stammers and non-fluencies) and,
2. Decreases cognitive, behavioural and physiological components of anxiety during a public speaking performance.

## **Anxiety**

Anxiety is an emotion of feelings of tension, worried thoughts and physiological changes. People typically experience feelings of anxiety before a future event or something with an uncertain outcome and people with anxiety disorders have recurring intrusive thoughts or concerns. They may avoid certain situations out of worry. They may also have physical symptoms such as sweating, trembling or a rapid heartbeat (American Psychological Association, 2013).

According to the theory on automatic reactivity, both state and trait anxiety stem from a specialised emotion circuit termed the Behaviour Inhibition System (BIS) (Gray, 1982; Gray & McNaughton, 2000). In 1966, Spielberger, suggested two sub-definitions of anxiety by distinguishing trait anxiety from state anxiety.

Spielberger defined trait anxiety as an individual's predisposition to respond, and state anxiety as a momentary emotion characterized by physiological arousal and consciously perceived feelings of apprehension, dread, and tension (Spielberger, 1966). It is important to distinguish that a person may feel anxious without having an anxiety disorder. In addition, anxiety frequently occurs as a symptom in other categories of psychiatric disturbance.

The BIS is responsible for three interacting but distinct anxiety components: cognitive, physiological, and behaviour reactions associated with state anxiety. In particular, the BIS hold back ongoing behaviour and reorients attention to the threatening situation while simultaneously increasing physiological arousal (Gray, 1990). Consequently, the level of autonomic reactivity is reflected by a physiological reaction, such as heart rate (Behkne & Sawyer, 2001). Sensation associated with an individual BIS response has been identified as the process responsible for converting normal fear reactions into pathological anxiety disorders such as social phobia (Rosen & Schulkin, 1998).

## **Social Anxiety**

Cognitive-behavioural models of social anxiety disorder (Clark & Wells, 1995; Hofmann, 2007; Rapee & Heimberg, 1997) suggest that arousal serves as an important part in building a mental representation of the self in social circumstances. For example, a person in a social encounter may believe that they are perspiring profusely and that others can see their perspiration and think they are socially inept “they must see me sweating and think I’m an idiot”. This perception of arousal contributes to negative perceptions of the self and could serve to exacerbate symptoms of anxiety and associated consequences such as avoidance (Thibodeau, Gomez-Perez & Asmundson, 2012). Other research suggests that people with

social anxiety appraise their own social performance as lower than observed by others, but they appraise other people's performances accurately (Rapee & Hayman, 1996).

Furthermore, a study by Hirsch, Mathews, Clark, Williams, and Morrison (2006) discovered that there is likely to be a causal role of negative imagery related to social anxiety. This hypothesis was tested on confident public speakers. The participants rated their anxiety as 'high' and believed they performed more poorly when holding a more negative image. In their study, the participants did not currently have anxiety problems, which suggested that their findings were consistent with the idea that negative self-imagery has a causal role in the development and maintenance of social anxiety.

### **Anxiety and Adolescents**

During adolescence, many academic, physical, psychological and social challenges are presented for the young people moving through this stage in their lives. In a school environment, adolescents learn to relate to and develop relationships with their peers and they have the opportunity to advance their cognitive abilities. During this time, and often in a school setting, a decline in a young person's self-esteem can occur and increased anxiety can ensue. An Australian youth population self-reported the majority of their most common fears concerned physical danger and safety (8 out of the top 10) according to the items ranked on The Fear Survey Schedule for Children-Revised FSSC-R (Ollendick, 1983). Interestingly, two of the most common fears, within the top 10, involved social-evaluative fears such as getting poor grades or failing a test (Ollendick & King, 1994). The two most commonly endorsed anxiety – provoking situations in adolescent populations are public speaking (Beidel & Randall, 1994; Giffen & Bradley, 1969) and unstructured peer interactions (Hofmann et al., 1999) because peers and their opinions become more important during

adolescence (Nelson, Leibenluft, McClure, & Pine, 2005). Furthermore, current findings support the idea that older adolescents have advanced cognitive abilities which allow them to reflect on upcoming events, thus contributing to more worry and increased anticipatory stress responses during a social evaluative task (Sumter, Bokhorst, Miers, Pelt & Westenberg, 2010).

Recent research reports that youth with social phobia experience an increase in objective physiological arousal during social- evaluative situations and are more aware of such increases compared to non-anxious youth. For example, an investigation by Anderson and Hope (2009) had adolescents take part in two anxiety-provoking tasks. The first task was a 10 minute impromptu speech in front of a small audience of one graduate student and two undergraduate students. The second task was a 10 minute conversation with an unfamiliar person who was a peer of the same sex and an undergraduate research assistant. The adolescents were asked to rate their subjective anxiety level, on the Beck Anxiety Inventory (BAI) Beck, Epstein, Brown & Steer, 1988), prior to and after the task, indicating the highest level of anxiety experienced during each task. Physiological measurements were collected before, during and after both tasks as well as during a 10 minute baseline period prior to each task. The first hypothesis for this investigation was that adolescents in the social phobic group would evidence greater physiological arousal (measured by HR and blood pressure) than that in the non-anxious group, but this was not supported. Although there were no differences between the groups on HR reactivity, both groups experienced a significant increase in HR during the first minute of the speech from baseline, which suggests that the task initially produced heightened physiological arousal for all adolescents (Anderson & Hope, 2009). Interestingly, the second hypothesis was that adolescents in the social phobic group would self report greater perceived physiological arousal compared to those in the non-anxious group, and this was supported. Both of these findings are consistent with previous

research that reports that those adolescents with social anxiety perceive their arousal as greater (Boone et al., 1999; Edelmann & Baker, 2002; Mauss, Wilhelm & Gross, 2004; Thibodeau et al., 2012). All of these results suggest that adolescents with social phobia are more aware of increases in physiological arousal than their peers. Based on these findings, it is possible that adolescents with social phobia exhibit more self-focused attention, which could lead them to be more aware of any increases in HR, even though these increases are relatively small and common for all adolescents during anxiety-provoking tasks.

From a developmental perspective, adolescence marks a significant transition period in development from childhood to adulthood, with resulting reorganisation within and among biological and psychological systems and the consequent emergence of new behavioural organisations. This period provides necessary advancements for prevention and intervention (Cicchetti, & Rogosch, 2002). Based on the importance of transitional periods and rapid changes to stability, there is also evidence that things learned in early adulthood are preferred and are remembered best (Rubin, Rahhal, & Poon, 1998).

### **Public Speaking Anxiety (PSA)**

Findings suggest that PSA peaks between the ages 13-17 or the high school years (Stein, Walker, & Forde, 1996). According to a recent review by Bodie (2010), PSA is a specific subtype of social anxiety whereby individuals experience physiological arousal (increased HR), negative self-focused cognitions (eg. I'm concerned I'll appear incompetent.), and/or behavioural observations (trembling) in response to an expected or actual presentation (Daly, 2009). The relation between public speaking anxiety and social anxiety suggests that it is important to make a distinction between individuals with solely public speaking fears on the one hand and persons with public speaking fears as a component

of generalised or non generalised social anxiety on the other (Blote, Kint, Miers, & Westernberg, 2009).

Speaker trait anxiety has been shown to be generally stable from one presentation to another, while speaker state anxiety fluctuates considerably before, during and following performances (Behkne & Sawyer, 1998, 1999a, 1999b). A study recently examined the extent to which trait anxiety and physiological reactivity predicted anxious arousal during a public speaking presentation. When combined with trait anxiety, physiological reactivity accounted for 73.3% of anxious arousal (Finn, Sawyer & Behkne, 2009). Therefore, the students who enter a classroom with high trait anxiety and a predisposition toward heightened physiological reactions are more likely to experience a state of anxious arousal or panic when performing in front of an audience than those who enter the classroom with low trait anxiety and low physiological reactivity (Finn, Sawyer & Schrodt, 2009). Students who are highly anxious may self-perceive a tremendous fear related to public speaking and experience an increase in HR during the performance. A cycle could be created in which self-perceptions are taken as the predisposition, and how individuals label their arousal could depend on past cues interpreted by their past negative experience, thereby reinforcing the high level of anxiety. So, self-perceived fear in communication situations are entwined in a system of attitudes and responses (Daly, 2009).

In summation, PSA has been classified as a subtype of social anxiety, which is situation specific and arises from the real or anticipated performance of an oral presentation. There is a clear distinction between state and trait PSA as well as between the physiological, cognitive and behavioural components of PSA.

**Common indicators of PSA.** Public speaking anxiety is defined in the literature as incorporating three systems (Lang, 1968) which are common to humans' responses in any

stressful situation like public speaking. These systems are physiological, cognitive and behavioural responses (Bodie, 2010).

***Physiological.*** The physiological component of PSA includes our internal nervous systems as well as the cellular and humeral systems, all of which regulate the human body and its response to stress (Andreassi, 2007). A fundamental assumption underlying physiological communication research is that physiological arousal underlies the observable behaviours.

HR is among one of the most commonly used physiological measures of PSA alongside blood pressure (Dickens & Parker, 1951) and electro-dermal activity such as palm sweat (Clements & Turpin, 1996). Furthermore, HR is one of the most reliable physiological measures of phobic anxiety (Gerlach, Wilhem, Gruber & Roth, 2001; Wilhem & Roth, 1998). A number of findings from scholars researching PSA have consistently found a significant increase in speakers' HRs above their baseline during a public performance associated with fear. A study by Beatty and Behkne (1991), found that the interaction between other components of anxiety and HR also depended on the intensity of the speaking task. For example, two conditions were compared. The first condition was labelled low intensity and involved an ungraded speech being delivered to a single audience member. The second condition was labelled high intensity and involved a graded speech delivered to an audience. High trait anxiety speakers' HRs were significantly higher than the low trait anxiety speakers. However, under the high intensity condition, no difference in HR existed between the anxious and non-anxious speakers (Beatty & Behkne, 1991). Previous to the above study, Booth-Butterfield (1987) had speakers perform voluntarily before a single audience member, for no grade. The HRs of the anxious speakers were lower than those of the low anxious speakers who were delivering graded speeches in the classroom setting in front of an audience (Booth-Butterfield, 1987). More specifically, research has found that HR



acceleration peaks during the first minute of performance and diminishes over the course of the presentation and self-reported anxiety is usually highest the minute before speaking (Behkne & Sawyer, 1998, 1999a; Finn, Sawyer & Behkne, 2003; Porhola, 1999).

**Cognitive.** The second component of anxiety is cognition, or thought processes. In one recent study cognitive trait PSA and arousal accounted for nearly three quarters of variance in the tendency to panic during a speech (Finn et al., 2009). For example, Porhola (2002) reported that speakers with moderately elevated HRs demonstrated high levels of public speaking competence while those with faster HRs gave presentations of much poorer quality. After their speech presentation, the participants completed a survey using a scale measuring their cognitive experiences during the presentation. The speakers with high levels of trait anxiety reported negative feelings and thoughts and labelled their arousal as anxiety, while the speakers who were willing to communicate reported positive feelings and thoughts, and labelled their arousal as enthusiasm or excitement (Porhola, 2002). In addition, excessive physiological arousal contributes to the inefficient use of memory resources (Idzikowski & Baddeley, 1983), and diminishes the efficiency of cognitive processing during performance (Mendl, 1999). Consequently, an increase in HR has also been associated with disruptions and inhibited behaviour during a public speaking performance (Beatty, Dobos, Balfantz, & Kuwabara, 1991; Freeman, Sawyer, & Beknhe, 1997).

Fortunately, individuals who are encouraged to believe that they are not as vulnerable as they previously assumed become less prone to generating frightening thoughts in threatening situations. According to Albert Bandura (1997) subjective anxiety and biological stress reactions are largely the products of perceived inefficacy to exert control over potentially aversive events (Bandura, 1997). Those who fear less may reduce their self-doubts and debilitating self-arousal to the point where they perform successfully (Bandura, 1997). Research by Sedikides and Green (2000) investigated how individuals manage the

inconsistency between incoming thoughts of negative self-referent information on the one hand and store positive self-knowledge on the other. They found that individuals are motivated to resolve inconsistency even when such resolution has unfavourable implications for the self. Individuals will strive to resolve inconsistency even when the truths of their memorable self-beliefs are threatened. In their quest for accurate self-knowledge, individuals remain undaunted by the potential of threat to self (Sedikides & Green, 2000). In addition, positive self-conceptions can facilitate the processing of new positive and self-referent information. The processing time can be minimal and does not make a difference. In fact, minimal time of 2-seconds will be sufficient for the thorough processing of new positive behaviours, and this processing will manifest itself in substantial levels of recall (Sedikides & Green, 2000). Findings from a study by D'Argembeau and Van der Linden (2004) indicated that projecting oneself into a specific positive or negative experience and trying to pre-experience it in as much detail as possible results in a richer representation when the event is expected to be experienced in the near future rather than in a more distant future. This study also found that constructing memories of positive past experiences takes less time than constructing memories of negative experiences, but only when these experiences are perceived to be of sufficient importance to the current self-view (D'Argembeau & Van der Linden, 2004).

Cognitive research suggests that a high level of negative thinking exhibited by the speaker can reduce speaking competence (Rubin, Rubin, & Jordan, 1997). The communication apprehension perspective put forward by James McCroskey states that negative thinking is learned from previous negative experiences (McCroskey & Daly, 1984a). These negative experiences seem to manifest into a strong tendency for PSA, to think negatively and enable the negative thoughts to intrude on the ability to attend to aspects of the speaking situation (Addison, Clay, Xie, Sawyer, & Behkne, 2003; Ayres, 1992). Although,

all people tend to think more negatively than positively when it comes to speaking in public (Booth-Butterfield & Booth-Butterfield, 1990; Verderber, Sellnow, & Verderber, 2011).

***Behavioural.*** The behavioural component of anxiety, influenced by a high level of anxiety, can be debilitating to public speaking performance. More specifically, a frequent finding has been that behavioural anxiety is associated with dysfluencies of speech such as increased pausing and stuttering (Eldred & Price 1958; Hofmann, Gerlach, Wender, & Roth, 1997; Lewin, McNeil, & Lipson, 1996). In a recent study, by Laukka et al. (2008), a number of people (71) with social phobia presented a speech and through self-ratings they reported that they were experiencing anxiety. In addition observer measures of anxiety were recorded during a public speaking task both before and after treatment. Results showed that the most reliable predictor of anxiety was an increase in dysfluency (Laukka et al., 2008). Based on this research an inverse relationship is also likely; a decrease in dysfluency and the number of pauses should result in decreased anxiety levels.

Currently observation cannot directly measure cognition, so one's own thoughts about PSA, are commonly measured by self-report. There are some limitations to this form of measurement for example, an individual may be willing to report being anxious when giving a speech but find it difficult to determine and report other factors relating to why the attitude or feeling exists. The individual might forecast different attitudes and perceptions about similar future events to those experienced now or in the past (Daly, 2009). Self reports indicating a high level of PSA have significantly more negative and self-focused thoughts and individuals report being more concerned about their performance and about being evaluated than people with a reported low level of PSA (Brodie, 2010).

Research has revealed the importance of recognising the clear distinction between all the components of PSA, especially when investigating the effectiveness of proposed

treatments hoping to decrease anxiety. Allen (1989) demonstrated, through meta-analysis, the effect of choosing any one form of anxiety as an outcome measure for a correction program, “indicates that the type of measurement will affect the conclusions about the effectiveness of therapy to reduce public speaking anxiety” (Allen, 1989, p136). The conclusion can be drawn that all three systems of anxiety, physiological, cognitive and behavioural indicators of anxiety, should be measured as one form will not generalise to the other two forms.

**Treatment for public speaking anxiety.** There are a number of treatments for PSA that have been reported as being successful in the literature. The most commonly used treatments and each of their unique strategies are mentioned briefly below.

***Systematic Desensitization (SD).*** The process of SD involves training in deep muscle relaxation techniques, construction of a hierarchy of anxiety-eliciting stimuli, and the gradual pairing, through imagery, of anxiety-eliciting stimuli with a relaxed state. Systematic desensitization attempts to change the individual’s negative association with the aversive stimulus, such as, performing in public. For example, first one may go through tensing and releasing muscle groups throughout the body. Once relaxed, one could be asked to imagine a progressive series of public speaking situations and these are ordered from the most relaxed (lying in bed) to tense (presenting a speech in front of an audience) situations. As soon as the person becomes relaxed in one situation they will be introduced to the next situation following the hierarchy (Lane, 2006). Current thinking suggests that SD works as a treatment for PSA because of repeated exposure to an arousing situation (Finn, Sawyer & Behkne, 2009).

***Cognitive modification.*** The aim of cognitive modification is to replace negative thoughts with positive thoughts in relation to public speaking and self-statements. For example, a negative self statement, such as, “a failure in this situation would be proof of my

incapacity” would be encouraged to be seen as irrational, through investigating other thoughts. Alternatively, an introduction of a positive self-statement such as, “even if things go wrong, it’s not a catastrophe” could be established as a new thought (Hofmann & DiBartolo, 2000).

***Communication-Orientation Modification (COM therapy).*** Communication-Orientation Modification known as COM therapy derives from cognitive modification developed by Michael Motley. It has also been investigated further, by other researchers, as an effective treatment for PSA only, but limited for other uses (Ayres, Hopf, & Peterson, 2000; Motley & Molloy 1994). The basis for the theory behind COM treatment is that public speakers have different cognitive orientations that are either a *performance orientation* or a *communication orientation*. In short, performance orientation assumes that the audience involvement is to evaluate the speaker solely through a check list of hypercritical criteria. In contrast, communication orientation assumes that the audience is focused not on the speaker but rather on the speaker’s message with regards to their topic and information. The aim of COM therapy is to concentrate on favouring the communication orientation over the performance orientation (Motley, 1997).

***Visualisation.*** Following the cognitive approaches and assumptions, visualisation has been used as a treatment for PSA in combination with SDs relaxation techniques. The belief informing this is that speakers with PSA exhibit anxiety because they cannot visualise success and this inability to visualise success is exhibited by the speaker’s negative thoughts before, during, and after a speech (Ayres, 1988). The process of visualisation is achieved by taking the speaker through the steps from beginning to end. The script is general and the people are encouraged to personalise it to promote a vision of them following the script. Visualisation moved a step forward when Ayres and Heuett (1997) discovered that visualisation could change the way people with PSA envisioned themselves as public

speakers. Their study exposed people with high levels of PSA to visualisation and found that they envisioned more detailed situations, and saw themselves as more in control and more positive than people who also had high levels of PSA but were not exposed to visualisation. This particular research finding is also important because it highlights that the way one envisions oneself may be a causal element in the communication apprehensive experience (Ayres & Hopf, 1985).

***Virtual Reality (VR).*** Virtual reality is a computer generated environment that can simulate physical presence in places in the real world, as well as in imaginary worlds. Because it is now known that a virtual environment, such as the image of an audience, can elicit anxiety, research is developing virtual reality as a treatment for PSA (Krijn, Emmelkamp, Olafsson, & Biemond, 2004). Only a few studies have been published testing VR and its effectiveness as a treatment for PSA and there is a call for more studies to test VR as a treatment alone. The few studies published do show some promise. For example, a study by Harris, Kemmerling, and North (2002) investigated VR in reducing PSA in university students. Their assessment measured four self-reports and HR monitoring during speaking. The results from all measures appear to indicate that the VR treatment sessions reduced PSA for the students. One other experiment examined PSA in response to three different types of virtual audience (positive, static and negative). The responses were measured using the Personal Report of Confidence as a Public Speaker PRCS (Paul, 1966) pre and post speech. They found that post speech PRCS scores were only positively correlated to the positive and static audiences. The negative audience provoked greater anxiety according to the post PRCS results (Pertaub, Slater, & Barker, 2002).

***Skills Training (ST).*** Skills Training programs can take many forms and have widely varied content and procedures, but generally consist of one or more of the following components: direct instruction and coaching, modelling, goal setting, covert rehearsal,

behavioural rehearsal, and self-monitoring (Glaser, 1981). Research on ST alone as a treatment for PSA is rather limited but it has been used in combination successfully with a number of treatments. A study by Heuett, Hsu, & Ayres (2003) sought to test the hypothesis that matching a supposed source (behavioural, physiological, cognition) of communication apprehension with a certain type of treatment (visualisation, SD, ST, and a combination treatment of all three) was more effective than not matching treatment with the source. The ST treatment, in this case, focused on the introduction, main points, and the conclusion of the speech, as well as, transitions, eye contact, hand use, movement and voice fluctuation and proper use of notes. The results of this study were mixed but, generally supported the hypothesis. Matching a behavioural source, as the problem, with the ST treatment, resulted in a reduction of PSA but, did not work well with encouraging speakers to willingly communicate. To help them further, ST would need some cognitive treatment included as a combination treatment package. In another study, Behnke and Sawyer (2004) suggested that ST can teach people with PSA, specifically by providing knowledge and techniques necessary for effective public speaking and this may help to habituate speech anxiety. However, ST did not directly address the anxiety speakers brought with them to the classroom and the study suggested that augmenting exposure sessions such as systematic desensitization could enhance the benefits of the skills training.

***Performance Feedback.*** Performance feedback can be shown through videotape. Videotape feedback has been used effectively for instructional purposes for performing in public (Bourhis & Allen, 1998). Video feedback captures the person demonstrating both positive and negative behaviour. Video feedback has demonstrated effective correction of a distorted self-perception through providing taped performance feedback in people with social anxiety (Harvey, Clark, Ehlers & Rapee, 2000) and in another study, Rodebaugh, Heimberg, Schultz, & Blackmore (2010) investigated the effects of video feedback for people with

social anxiety. This study found that the intervention improved self-perception of performance, particularly for those participants with the most unrealistic negative impressions of their performance. Therefore, video feedback can be used to help people with social anxiety challenge their negative thoughts and negative image.

Negative performance feedback aims to point out certain behaviours performed in the past that should not be performed in the future and positive performance feedback is helpful to reinforce that this preferred behaviour is likely to be selected in future situations. Some research has suggested negative comments are perceived as more helpful than positive ones, especially when these comments focus on the most needed areas of improvement for a particular speaker (Bodie, 2010). Since negative performance feedback does help identify problematic behaviours performed in the past, the next step for this person is to prepare for the future and a more positive and effective performance. With negative feedback, one is often left thinking about what one is not meant to do, losing focus on what one can do well. The importance of being mindful of student sensitivity to feedback, the degree of negativity of feedback, and the appropriate timing of certain feedback to support the person planning behaviour changes for their future performance, has also been noted in the literature (Clynes & Raftery, 2008; King, Young, & Behkne, 2000; Smith & King, 2004).

This study acknowledges the above research and aims to shift focus from concentrating on the negative feedback on performance to feed-forward in preparation for a more positive future performance (Hitchcock, Dowrick, & Prater, 2003). Video Self Modelling technique demonstrates only the positive behaviours from the past that aim to inform the individual of what they can and should do in the future.



## **Video Self-Modelling (VSM)**

**Modelling and observational learning.** In the early 1960s, Albert Bandura conducted ground-breaking modelling research known as the ‘bobo doll experiment’ (Bandura, Ross, & Ross, 1963). The experiment involved preschool children witnessing adults abusing an inflatable doll, which led the children to later mimic the behaviour of the adults by attacking the doll in the same way. Bandura and his research team had discovered that children are able to learn through the observation of adult behaviour.

Bandura subsequently proposed social cognitive theory which suggests that behaviours can be taught and developed through modelling. There are three main concepts of social cognitive theory. Firstly, from observing others, one can form a conception of how new behaviour patterns are performed and on later occasions the symbolic construction can serve as a guide for action (Bandura, 1971). Secondly, one’s mental state is an essential part of the process for learning which emphasises the internal thoughts and cognitions which help connect learning and behaviour. Thirdly, the theory recognises that even though people can all learn something new it does not mean that their behaviour will necessarily change (Bandura, 1977).

Building on Bandura’s research, Peter Dowrick has also explored SM since the 1970s and he has moved from an understanding of modelling to VSM. The key characteristics of VSM are the observer’s potential and need to recognise conceptual and semantic information about the self. A video self-model is of the individual him or herself and aims to make the situation more personally significant to increase the likelihood of this constructed memory being projected into future thinking. Observing the self model should provide an opportunity to register or encode such behaviour and to recognise one’s potential to reach a valued goal (Buggey & Ogle, 2012; Dowrick, 2012). Dowrick (1999) states that there are a number of

contributing factors to include for successful learning by observation. Some contributing factors are clarification of goals and outcome, demonstrating a positive self-image, reminders of previous competence, repeated observation of competent role-play and, anxiety-free behaviour or successful outcomes despite anxiety.

Over the last 40 years, research has indicated that there are two fundamental points essential for successful modelling; firstly, it is best to use the self, or someone with the same attributes, as a model and secondly, Bandura also found that the higher the belief in success, the higher the success rate. Therefore, SM allows people to see themselves succeeding and increases their self-efficacy. In addition, Bandura more recently, in 1997, noted that the advantage of seeing oneself perform successfully “provides clear information on how best to perform skills” and “strengthens beliefs in one’s capability” (Bandura, 1997, p94). Dowrick (1999) has also built on the idea of using the self as a model. The individual can learn to imitate their own modelled behaviour, as it provides them with relevant information by showing their own potential. It can also show how best to perform a skill and this strengthens their beliefs in being able to do so (Dowrick, 2012).

**Mechanisms of modelling.** There are four steps involved in the modelling process that ensure better outcomes. As mentioned before, not all observed behaviours are effectively learned. In order, one must firstly have *attention*. If the observer is interested in what is being modelled then there will be a dedication for focus and learning. Second, the observer needs to have *retention*. This is the ability to retrieve the learned information gained from viewing the modelled behaviour a number of times, before enacting on it. Third, is the necessary component of *reproduction*. More practice of the learned behaviour will lead to further improvement. Finally, it is the observer’s *motivation*. This is a key component which can

sustain the idea of achieving their desired goal and encourage continuation of modelling the learned behaviour (Bandura, 1977).

The process of creating a video self-model involves selecting exemplars of the targeted behaviour and combining these clips into a short movie made possible by the use of available software such as: Apple's *iMovie* or Microsoft's *Moviemaker* applications (Buggey & Ogle, 2012). Video editing techniques are used to remove inappropriate behaviours and prompt so as to depict appropriate behaviours only removing self-observation of raw video footage in order to avoid the modelling effect of inappropriate behaviours. If the individual focuses primarily on their mistakes they not only fail to observe and strengthen the more positive behaviours being modelled, the viewing of inappropriate behaviour can evoke negative feelings that are associated with the behaviour and they consequently learn to associate feelings of unpleasantness with the self-observation process itself (Hosford, 1981). The edited video is viewed, a number of times, as the intervention.

Some new evidence has emerged through the use of functional Magnetic Resonance Imaging (fMRI) and that in relation to the concept of viewing a video self-model a number of times, recent empirical observations, using brain imaging, reveal that frontal and medial temporal memory systems participate in envisioning the future in ways that parallel their role in remembering the past (Addis, Wong & Schacter, 2007; Buckner & Carroll, 2007). Buckner and Carroll speculate the possibility that the core brain network supports multiple forms of self-projection that involve remembering the past and include thinking about the future. This stresses the importance behind the contribution of building mental visualisations of what might happen and other perspectives in the immediate environment (Buckner & Carroll, 2007).

**Types of video self model.** Dowrick (1999) defines two types of video self model: Positive Self-Review (PSR) and FeedForward (FF). ***Positive self-review.*** Positive self-review provides the self with an opportunity to view only a collection of their best efforts, and models what the individual wishes to achieve. ***Feedforward.*** Feedforward is used to show students they can create a future skill that has yet to be achieved or demonstrated in a particular setting. Positive Self Review is used in contexts of low frequency of desirable behaviours which aims to increase the frequency of the target behaviour. An example of PSR is that of an 18 year old whose rapid slurred speech was difficult to decipher, in that most people could only understand 50% of what she had to say. She had a goal to increase the level of understanding to at least 90%. Recordings of her speaking on video used a mix of phrases, words and vowels that could be edited to create best examples of clear speech. That together with the addition of applause at the end of successful phrases constituted a PSR video vignette. After two weeks of viewing her success on video, the following week she reached her goal and intelligibility and fluency were maintained throughout the year (Dowrick, Tallman, & Connor, 2005). An example of FF is that of three children with selective mutism, who could speak at home freely but not at school. They experienced a “rapid change” after using self-modelling with FF as one form of treatment in their study. They were all speaking in school openly immediately after the onset of treatment, by viewing edited videos of themselves in a number of situations. In one case, a child was videoed speaking to one of her parents in the classroom. They were the only two people in the room and this footage was edited to show the child speaking in the classroom environment. All of the children saw that they could successfully communicate with their peers and their teachers as well as their parents in the classroom setting. These rapid improvements could suggest that the skill of generalised speaking was more likely acquired from the form of self-modelling rather than the change being attributed to any other event (Dowrick & Jesdale, 1990; Kehle,

Madaus, Baratta, & Bray, 1998). To help reduce an adolescent's fear and help them develop appropriate skills towards effective public speaking a PSR or FF video could also be created. To form a PSR video or FF the adolescents previous best performances are edited together by cleverly editing the video to depict not yet achieved or infrequent positive images.

**Mental Time Travel (MTT).** Mental time travel is defined in the literature as the ability to mentally project oneself into one's personal past or future through memories or projective thoughts of the future (Finnogadottir & Bernstein, 2011; Suddendorf & Corballis, 2007). Other terms connected to the definition MTT are related concepts 'self-prospection' (Buckner & Carroll, 2007), 'pre-experiencing' (D'Argembeau & Van der Linden, 2004) and 'episodic future thinking' (Bernstein & Bohn, 2010).

Episodic memory, in contrast to semantic memory, provides access to a personally experienced event, rather than just knowledge extracted from the event (Suddendorf & Corballis, 2007). This means that MTT cannot be defined solely on knowing the facts of an event but mostly on the mental reconstruction of some earlier event envisioning at least some particularities such as the characters involved, actions that took place, the setting, and the emotional reactions (Suddendorf & Corballis, 2007). Throughout the literature episodic memory is mentioned by many authors as being a general ability required for MTT. Episodic memory has been previously defined as allowing the individual to project themselves backward in time and recollect many aspects of previous experiences (Tulving, 1983).

A more recent definition states that episodic memory emphasises both the ability of the individual to re-experience episodes from the past and also imagine or pre-experience episodes that may occur in the future (Addis et al., 2007; Atance & O'Neill, 2005; Buckner & Carroll, 2007; D'Argembeau & Van der Linden, 2004; Suddendorf & Corballis, 2007). Furthermore, Buckner and Carroll (2007) claim that the ability for prospection requires a shift

of perception from the immediate environment to the alternative, imagined event which is referenced to oneself. Self-reports suggest that prospection entails both first person (field) perspectives and third person (observer) views in which one sees the self.

Memory involves constructive processes that go beyond just the retrieval of stored information and includes self efficacy informed by prospection (Addis et al., 2007; Atance & O'Neill, 2005; Buckner & Carroll, 2007; D'Argembeau & Van der Linden, 2004; Suddendorf & Corballis, 2007). We remember information that informs our current behaviour and the use of VSM as an intervention looks at creating information for learning a possible future behaviour. Also, one's recall is influenced by present factors such as levels of anxiety (Finnbogadottir & Berntsen, 2011; MacLeod et al., 1997; MacLeod & Bryne, 1996), current self-concept (Ayres, 1992; Addison et al., 2003; Greenberg et al., 2002; Libby & Eibach, 2002; Sedikides & Green, 2000), motivation (Bandura, 1997, 1986; Dorwick, 2012), and stage of development (Sumter et al., 2010) which can all influence the content of an individual's recollection.

**How MTT may play a part in anxiety.** Human anxiety involves an ability to use memory, a complicated mental function, and imagination to move backwards and forwards in time. A large portion of human anxiety is produced by anticipation of future events. Without a sense of personal continuity over time, people would not have the neurological resource to create anxiety (Davidson, 2002).

In disorders such as social phobias, PTSD, and depression, memories are often experienced from an observer perspective, seeing oneself from the outside as opposed to the original point of view (Bernten & Rubin, 2006; D'Argembeau, Van der Linden, D'Acremont, & Mayers, 2006; Kuyken & Howell, 2006; Wells, Clark & Ahmad, 1998; Williams & Moulds, 2007). Therefore, the adoption of an observer perspective could prevent the

integration of the affective components of memory by inhibiting the individual from attending to these elements in favour of emphasizing the concrete and objective details of the original experience (McIsaac & Eich, 2004). In an attempt to distinguish between anxious and depressive future thinking, at the cognitive level, there is reasonable agreement to suggest that depressive cognitions are most closely associated with self-referent, definitive, past-oriented cognitions of sadness, failure, degradation, and loss. Conversely, anxiety appears most clearly associated with future-oriented ‘questioning’ cognitions (Beck, Brown, Steer, Eidelson, & Riskind, 1987; Clark, Beck, & Stewart, 1990; MacLeod, Tata, Kentish, & Jacobsen, 1997). Although, there is some evidence that suggests anxiety is related to negative cognitions extended to memory as well as expectancies (Burke & Mathews, 1992).

Research supports the distinction between anxiety and depression in relation to memories of negative experiences and unknown future events. This is reported, in a study, by MacLeod and Byrne (1996) that states that anxiety is associated with increased negative future thinking but not with decreased positive future thinking, whereas depression is associated with both increased negative and decreased positive future thinking (MacLeod & Byrne, 1996). Furthermore, in a follow up study, anxiety was associated with generating more negative experiences but not fewer positive experiences and depression was associated with generating fewer positive experiences but not more negative experiences (MacLeod et al., 1997).

Overall, the theory on MTT provides evidence for multiple memory forms functioning in the brain, including the cognition required for future prospective thinking, influencing behaviour.

## **Anxiety / Fears and Video Self Modelling**

Anticipation of and preparation for future harm are central features of fear and anxiety (Grillon, 2008). Fear is a surge of physiological arousal, an alarm reaction resulting in reflexive action, fight or flight when possible, or aimed at reducing the impact of the threat. In contrast, anxiety is elicited by unpredictability and by the perception of potential, unseen, or symbolic threats. Behaviourally, anxiety is associated with avoidance. Fear narrows attention and inhibits competing responses (Mowrer & Aiken, 1954), whereas anxiety increases overall sensory sensitivity (Baas, Milstein, & Donlevy, 2004; Cornwell et al., 2007).

Bandura accordingly terms the belief in our ability to succeed in certain situations as self-efficacy, and states that it is mainly a lack of self-belief in the ability to cope with potential threats that gives rise to both anticipatory anxiety and avoidant behaviour. A large number of studies have used variations of self-modelling procedures as an intervention for many different anxieties or fears. In more detail, Weisz, Hawley, & Doss (2004) investigated multiple anxiety treatments for children and adolescents and many modelling studies showed beneficial effects.

Modelling can be distinguished into three forms of modelling. The first form is live modelling. The person with anxiety watches a peer, therapist, or another person engaging in the feared behaviour and the model is relatively fearless from beginning to end. Afterwards the person will be invited to do what the model just did. The second form is symbolic modelling which is when the person with anxiety watches multiple brief videos which can be shown across several days that depict increasingly close approaches to the feared object or situation. The third form, participation modelling involves the person with anxiety and the model interacting. The model performs the feared activity and encourages the person to join in while providing a reassuring presence.



Symbolic type modelling has been successful as a treatment for dog phobia (Bandura & Menlove, 1968) and social withdrawal (Jakibchuk, & Smeriglio, 1976; Keller & Carlson, 1974). For example, in Bandura and Menlove's (1968) study, thirty- two young girls and sixteen young boys were all shown eight different short videos. In one group condition the video showed a fearless 5 year old boy model progressively approaching a dog. In the second group condition the video showed both girls and boys varying in age interacting positively with smaller dogs and progressed to interacting around large dogs too. The control group watched a video on Disneyland. The first group results showed that the treatment had affected reductions in the children's avoidance response but it did not sufficiently weaken their fears to carry out approach behaviour. The second group showed continued improvement in approach behaviour. Both treatment groups achieved greater increases in approach behaviour than did the control group.

Participant modelling has also been successful as a treatment for claustrophobia (Speltz & Bernstein, 1979) and for bird phobia (Lassen & McConnell, 1977). The study by Lassen and McConnell (1977) used participant modelling as a treatment for bird phobia when a person of the same age and sex as the client was the model for 19 treatment sessions. The first session started with touching a bird picture and built up to a final session of walking alone through an aviary. After a one year follow up the improvement was maintained. One other study in the 1970s used a videotaped modelling procedure for the treatment of a specific phobia. A student had a fear of dissecting animals and this prevented her from participating in her laboratory at university. After three and a half weeks of treatment, which involved playing a 20 minute audio tape of relaxation training followed by a video tape which showed the process of dissecting an animal, her discomfort decreased and she was able to dissect animals (Freyer & Werner, 1970).

Since the former studies, SM has developed but in the 1970s the method involving VSM was regarded as a time-consuming process both in filming and editing (Creer & Miklick, 1970). Since the 1990s, with the advent of consumer video devices and digital video the process of editing has become a lot more accessible and easy to do (Collier-Meek et al., 2012).

The term *self model* refers to *video self model* (Dowrick, 1999) and the term *self modelling (SM)* and *video self-modelling (VSM)* can be used interchangeably with these terms. In general VSM as an intervention has indicated many successes and has been found to be an effective intervention for improving academic skills and behaviours for students with autism (Buggey, 2005; Buggey, Toombs, Gardener, & Cervetti, 1999; Coyle & Cole, 2004) and without autism (Dowrick, Power, Ginsburg-Block, Kim-Rupnow, & Manz, 2000; Hitchcock, Dowrick & Prater, 2003; Robson, 2013, In press). More specifically, SM has been incorporated successfully as an intervention to reduce inappropriate behaviours associated with externalising and internalising disorders (Madaus & Ruberto, 2012). In relation to SM and its use with internalising disorders a study from the late 1980s used self modelling to address anxiety and self-evaluation in a group of training counsellors. The results showed that that the edited self-model group had significantly less anxiety and was less concerned with their self-evaluation as opposed to the group who watched a self-model unedited (Johnson, 1989). More recently, a study by Greenberg, Buggey and Bond (2002) used SM as an intervention for oral reading fluency and self-perception. Results showed significant improvement in fluency and a heightened self-perception from past to present achievement. In addition, SM, as an intervention, has been used for treating depression, self-esteem (Kahn, Kehle, Jenson, & Clark, 1990) and spider phobia (Hood, 2004).

## **Public Speaking Anxiety and Video Self-Modelling**

Other recent studies have used forms of SM to improve speaking skills which are often associated with PSA, for example, selective mutism (Kehle et al., 2012), second language learners (Ortiz, Burlingame, Onuegbulem, Yoshikawa, & Rojas, 2012) and stuttering (Cream et al., 2010). A study produced in 1996, and then replicated in 1998, by Bray and Kehle, used VSM as a treatment for stuttering adolescents. In the first study, three adolescents watched three 5 minute VSM videos of themselves displaying fluent, stutter-free speech, six times, over a 5 week period. All of the 3 adolescents showed a decrease in the frequency of stuttering after watching their VSM videos. In the second study, 4 adolescents watched two 5 minute VSM videos of fluent, stutter-free speech, seven times over a 6 week period. Again, all of the adolescents' stuttering decreased (Bray & Kehle, 1996; Kehle et al., 1998).

The current study is based on previous research conducted by Rickards-Schlichting et al. (2004). Their study investigated the effectiveness of SM as an intervention for public speaking anxiety which involved six high school students from New England suburban area in the United States. Baseline data was collected on 5 occasions over a period of 3 weeks which required the students each to present speeches, which were videoed, to a random peer audience. The intervention tape was produced from each student's baseline footage, but the footage was edited to remove any behaviours representative of speech anxiety these common behavioural indicators were recognised and defined on the Behavioural Assessment of Speech Anxiety BASA (Mulac & Sherman, 1974) instrument developed by Mulac and Sherman in 1974. Two 3-second segments of the student peer audience were edited into the intervention tape. One 3-second segment was placed to show an audience paying attention mid-way and a segment was edited in to show the audience applauding at the end. Overall the edited tape was 3-4minutes long. Direct observations measured the physical manifestations of

anxiety, and the students self-reported their anxiety levels, at baseline and follow up. The participants watched videos of themselves speaking fluently to peers, after which outward signs of anxiety decreased considerably and self-reports of speaking fluently improved from baseline to follow-up. Interestingly, the suggestion following on from their study called for some external validity in single subject design which could be substantiated through replication and the natural settings of a school setting would increase external validity.

Following on from this study and based on a number of previous studies using VSM which have reported success in increasing or decreasing certain behaviours, and in particular overcoming anxieties or phobias, the intention for this study will be for the students' levels of anxiety around public speaking to decrease as a result of viewing themselves successfully presenting a speech. Each of the participants in the study will improve their public speaking fluency after viewing their VSM video 5-8 times over a period of 2 weeks. The current study uses VSM, in a high school setting, as an intervention for teenagers with PSA.

## **CHAPTER 2: Method**

### **Ethical considerations**

Ethical approval was obtained for the project from the Educational Research Human Ethics Committee at the University of Canterbury, New Zealand (see ERHEC letter of approval in Appendix A). Permission was granted from the high school principal and the chair of the Board of Trustees to conduct the research project within the school. Consent was gained from the classroom teacher, the students and their parents, including the student audience members and their parents.

Participation was voluntary and all participants were informed of their right to withdraw from the study at any time, as far as practicable (see Appendix B-C).

## **Design**

A within-participant, AB design was replicated across ten participants where A was baseline and B was the video self-modelling (VSM) intervention. Each participant acted as the control within his/her own study (Barlow, Nock, & Hersen, 2009).

## **Participants and Setting**

Ten high school students (3 male, 7 female), aged 16-18 years, participated in the study. The students were recruited from an English class at a South Island high school in New Zealand. All members of the class completed the Personal Report of Public Speaking Anxiety (PRPSA) questionnaire (See Procedure section below). The selected participants met the following criteria: (a) consent was given; (b) the student had Personal Reports of Public Speaking Anxiety (PRPSA) (McCroskey, 1970) scores for this study ranging from moderate (93-110), moderate high (111-119), and very high (120-170); (c) the students had a high class attendance rate; (d) they had few extra-curricular activities which might compromise their availability for the study.

The remainder of the English class, those not meeting criteria of the 10 students, participated as student audience members. The context for the study was the National Certificate of Educational Achievement (NCEA) oral assessment level 3.5, for 9 of the students. The oral assessment was level 2.5 for one student. The 3.5 standard requires the students to present their topic fluently in front of an audience for a minimum of 6 minutes, in order to meet criteria. The 2.5 standard requires the student to construct and deliver, in front of an audience, a crafted and controlled oral presentation for a minimum of 4 minutes.

## Assessment

**Measures.** Three types of measurement are used in this study to measure PSA. These are two self-report scales, behavioural observations and a physiological measure. These three kinds of measures were used because, according to McCroskey (1997), self-reports, observer ratings and physiological indicators do not measure the same thing but instead, these three types of measurements measure different aspects of communication apprehension that is, cognitive, behavioural and physiological. The cognitive refers to the subjective perception of fear or anxiety associated with communication (Ayres, 1997). The behaviour measure is the observer's perception of speaker anxiety based on manifested speaker behaviour (Mulac & Wiennman, 1997). Thirdly, affective aspect is the physiological experience of arousal during a speech, indicated through increases in HR or the presence of perspiration (Beatty & Dobos, 1997).

***Self-report measures.*** Two self-report instruments were administered, as follows.

*The Personal Report of Public Speaking Anxiety (PRPSA).* Created by McCroskey in 1970, a self-reported public speaking anxiety instrument was used to measure the participants' levels of PSA as a screening test for recruitment and at post-intervention (see Appendix F). The 34 item Likert-type scale yields scores with the possible range of 34-170 (McCroskey, 1970). The hypothetical neutral position for the PRPSA is 102. This instrument was designed to measure public speaking anxiety conceptualised as general context communication apprehension. The PRPSA measures anxiety levels pertaining to public speaking and does not measure any other types of communication-based anxieties. The PRPSA self-report measurement has been used in other studies (Motley & Molloy, 1994; Rickards-Schlichting et al., 2004; Whitworth & Cochran, 1996) which demonstrate good validity and reliability when measuring PSA in isolation. The concurrent validity of this scale

has been demonstrated by correlations above .80 with the *Personal Report of Confidence as a Speaker (PRCS)* (McCroskey, 1984b).

*Self-Statements during Public Speaking (SSPS)*. This was administered to assess the participants' fearful thoughts during public speaking straight after the pre and post intervention speeches, the second self-reported instrument, Hofmann and DiBartolo (2000) developed this 10 item instrument that consists of two subscales: Positive and Negative Self-Statements (see Appendix G). It is classified as a trait measure of positive and negative thinking for public speaking. For the positive scale, higher scores indicate less anxiety (Hofmann & DiBartolo, 2000).

Safir, Wallach and Bar-Zvi (2012) found this instrument to have a high reliability and good validity correlating well with similar measures such as the Personal Report of Confidence as a Speaker = .67 PRCS (Paul, 1966), Fear of Negative Evaluation = .49 FNE (Watson & Friend, 1969), Social Phobia and Anxiety Inventory = .48 SPAI (Turner, Beidel, Dancu, & Stanley, 1989).

### ***Behavioural measure.***

Behavioural manifestations of speech anxiety were measured for each speech using the *Behavioural Assessment of Speech Anxiety (BASA)* measure (Mulac & Sherman, 1974). This instrument uses direct observational data, in this case obtained from video recordings of the student's pre- and post-intervention speeches, and consists of 18 items that may be observed during a speaker's performance (see Appendix H). There are four independent factors, *rigidity*, *inhibition*, *disfluency*, and *agitation*, included in the BASA with assigned items. Each item is scored for the level of anxiety observed on a 10 point Likert scale from "no anxiety at all" recorded as 0 to "strong anxiety" recorded as a 9. Each item has assigned variable weightings. This instrument has been used successfully in a number of investigations

(Ayres, 2005; Ayres & Sonandre, 2003; Finn et al., 2003; Freeman et al., 1997; Jaremko, 1980; Rickards-Schlichting et al., 2004; Sherman, Mulac, & McCann, 1974; Trussell, 1978).

### ***Physiological measure.***

The physiological measure chosen for this study was HR. Four of the 10 participants (male= 2, female = 2) volunteered to wear HR monitors. These participants' heart rates were monitored at 5-second intervals during both pre and post intervention speech tasks (using Polar Pro Trainer 5 heart-rate monitors), and for a baseline period of two school days prior to each task. The participant wore a belt around the chest underneath his or her uniform that transmitted electrocardiogram (ECG) signals to a watch worn around the wrist. After the measurement session, the participants' heart-rate data was downloaded onto a computer (using the Advantage Interface System, by Polar Pro Trainer 5).

### **Apparatus**

Two video cameras, a Canon Legria HF20 and a CISCO Ultra Flip camera were used simultaneously. The Flip was used to capture the full length of the participant for direct observation purposes for the presentation and the Canon HF20 to provide footage to produce a video self-model film. Both cameras captured video in 1080i high definition (HD) and produced good quality audio.

The computer software package, iMovie 09 on an Apple Macbook computer, was used to edit the participant's pre-intervention speech to construct a VSM for each participant. To convert the video from the Canon, a program called AnyVideo Converter HD was used before uploading the videos to iMovie.



The heart-rate monitor package consisted of: Polar RS400 heart-rate monitor, Polar Wearlink+ transmitter belt, Polar Pro Trainer 5 software, dongle IrDA port and infrared using external Polar IR Interface. Only four HR monitors were available at the time.

## **Procedure**

### **Recruitment of participants**

To recruit students, the classroom teacher administered the PRPSA questionnaire to the whole English class as part of the usual class programme.

From the class data, information sheets and consent forms were prepared according to the two phases of the study. These were i) the 10 students and their parents and ii) the rest of the class and their parents. The second group was to function as student audience. Signed consent forms were returned and the study started. The researcher was notified by one female, who by never returning the consent, indicated that she did not want to participate. In addition, two other females, with initial high PRPSA scores, did not participate because of sporting commitments. Consent and information sheets were addressed to the next highest scoring students (see Appendix B-C).

The audience filming took place following the return of their consent forms. The students were instructed to sit down at their desk and face the camera, placed at the front of the room, and to look in this direction as if they were silently listening to a speech. No speaker was actually in front of the class. The researcher from this angle was only doing the filming. Their second task was to stay seated but to applaud as if they were pleased, by clapping and smiling towards the camera. The researcher shot a short number of clips in this manner. These filmed clips showed an attentive student audience, and the same audience members applauding. This attempted to give the student who would potentially be viewing

this clip a sense of seeing the event from the point of view of being there (field), as opposed to observing the situation from an external vantage point.

The researcher met with the 10 students, in the main part of the study, to discuss any further details and answer any of their questions. The researcher asked the group who would like to wear a HR monitor. Two females volunteered and there were only two males present. One was quite happy to, and he did volunteer, but another male was nervous and did not feel confident about wearing the monitor. Another male student, who was absent from the meeting, was willing and volunteered to wear the HR monitor.

The four students volunteered to wear heart-rate monitors during the pre- and post-speech tasks. Prior to presenting their pre-speech, they wore the heart rate monitors for two school days - from 9am-3pm. They recorded their activities during each of the two days, such as eating lunch, finishing an assessment or running around in physical education (see Appendix E).

A guideline sheet for their pre-speech task was handed out at the meeting to all the students (See Appendix D), asking if they could prepare a 2-3minute presentation on their research topic. The students were instructed to have this ready for filming during the following week.

### **Pre-intervention speech**

All of the students presented their pre-speeches individually. Once the student had entered the room, and was alone with the researcher, their first task was to fill out their own SSPS self-report (See Appendix G). Heart-rate monitors were issued to the volunteer students just before they made their presentation and returned after their presentation.

The student took up a position at the front of room, and the cameras were positioned where the audience would normally have been seated. The students were not exposed to an audience for the pre-intervention speech for ethical reasons as a baseline under those circumstances, without intervention, was considered to be too stressful. Both cameras were started at the same time.

The students spoke for 1 and a half to 3 minutes presenting their pre-speech, a selected topic they chose for their NCEA oral assessment. The video of each of the students' presentations recorded was then viewed and scored using the BASA checklist (see Appendix H). The SSPS self-report and HR monitors were collected after each of their speeches.

### **Construction of VSM**

All raw video from the students and the student audience clips were converted using AnyVideo Converter HD and loaded into iMovie on an Apple computer. First, edited versions of their pre-public speaking task were created. Second, footage from the student audience listening to them speaking and applauding at appropriate times was incorporated into the VSM. Recognisable anxiety behaviours were edited out, such as long silences, vocalised pauses, and lack of eye contact and stammers, as much as possible without compromising the speech performance. The aim of the editing process was to produce video-footage which depicted the student engaged in the best public speaking performance possible.

Overall, each student had their own VSM which was 1-2 minutes in length. The VSM showed the individual demonstrating the skills necessary to speak to an audience successfully and this was viewed from an observer's perspective. The aim of the intervention was to empower the student to believe that they can speak fluently in front of an audience. In order to increase the likelihood of this happening, part of the VSM was viewed by the student, from the point of view as if viewing through the eyes of the speaker (field perspective). For

example, one shot looked as though their class members were looking at them and listening attentively to their speech. The field perspective shots were included to provide a more enriched emotional experience (Nigro & Neisser, 1983). These shots were incorporated alongside the observer perspective of the self, where the student was speaking towards the camera. This showed an association from the two perspectives; this was to enable the student to believe they would engage in the behaviours shown on the video self-model, and to believe that they have the ability to perform their speech in front of an audience, especially if they were struggling to see themselves performing successfully in this situation in the future.

### **Viewing VSM**

The students viewed their video self-model vignette, on the Apple Macbook computer screen, ranging from 5 to 8 times, over a period of two weeks, either during their study period, English period, or lunchtime at school. The student and the researcher were the only two people present in the room while viewing took place, to reduce possible feelings of anxiety and breaching confidentiality. Observation notes and reactions were written down by the researcher as the student viewed their own video self-model. No comments about the performance or teaching tips were offered by the researcher.

### **Post-intervention speech**

The students presented their post-intervention speech to a live audience in front of their peers and classroom teacher. The classroom teacher was assessing their performance in the form of written feedback and a summative NCEA grade. Again, the students were videoed and this record was used to produce a post BASA score. Heart-rate monitors were issued to the students just before they presented and returned after their presentation. The post-intervention, speech was under different circumstances from the pre-intervention in that their post-intervention speech was graded, longer in length and in front of a live audience. As

such it represents a higher-stakes presentation where we would expect more anxiety to be demonstrated than during the pre-intervention speech. Immediately following their speech, the students were asked to fill out the SSPS and the PRPSA self-reports.

### **Inter-observer reliability**

Two observers were trained by the researcher in how to score the BASA measure. They rated 20% of the videoed direct observations across the two phases, using the BASA measurement. Each of the two observers viewed the same two participants' public speaking, pre and post intervention, and completed the BASA measure for each. The BASA scores of the experimenter were compared with the observer's BASA scores for the same participant from the same session. Inter-observer agreement was derived by the division of the BASA scores of the researcher over the BASA scores of the two other observers, then by determining the percentage of that number. The range for the inter-observer agreement was 77.78% to 100%. The mean inter-observer agreement across the two phases was 90.28%.

## **CHAPTER 3: Results**

The results for all ten of the students, pre and post- intervention, are presented in order to ascertain whether the VSM decreased anxiety and increased fluency during their public speaking performance. Each of the three different components of anxiety was explored, first through an analysis of the self-report measures. All ten students' pre- and post-VSM, overall scores will be shown on two separate graphs showing their Personal Report of Public Speaking Anxiety (PRPSA) and their Self Statements during Public Speaking (SSPS). Both of these instruments measure the cognitive component of anxiety. Following this, a graph will reveal all ten students' pre- and post- VSM overall scores on the Behavioural

Assessment of Speech Anxiety (BASA), the behavioural component of anxiety. A more detailed analysis of one factor, in particular, named *disfluency* will be examined further. This factor has assigned five items: 1) non fluent, stammers, halting gestures and repeated word 2) vocalised pauses 3) hunts for words and speech blocks, long silences 4) quivering or tense voice twitches and 5) breathes heavily, sniffs or sighs. In addition, the HR data for four students is presented individually. The recordings for each of the four students' HRs are reported under three different conditions; a school day, pre-intervention speech and the most exacting post-intervention speech condition.

### Personal Report Public Speaking Anxiety

The PRPSA classifies three levels of anxiety. A high level of anxiety is a score of 131 and above, moderate is 131-98 and a low level of anxiety is 98 and below. The student's scores can be seen in Figure 1.

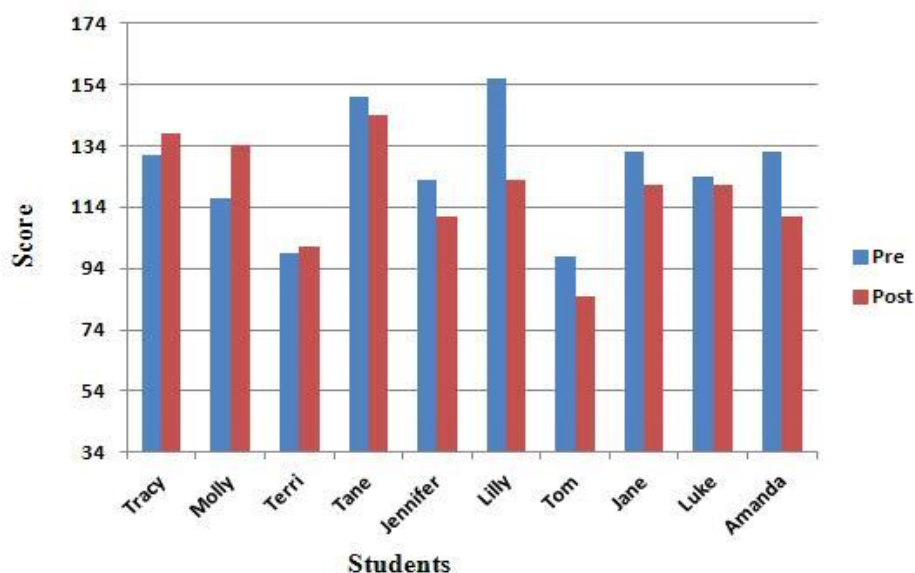


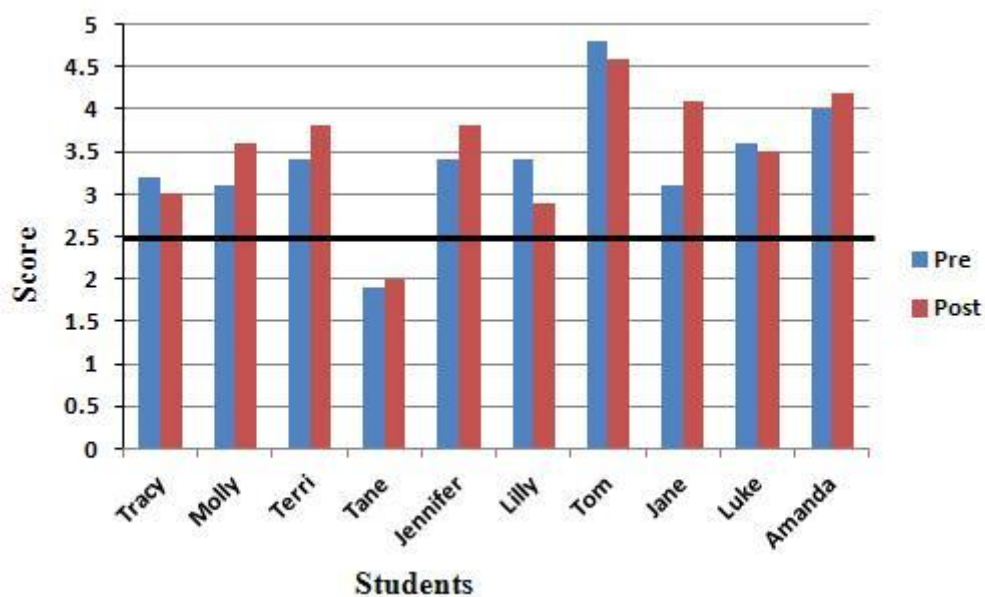
Figure 1: Pre-intervention and Post-intervention overall scores on the PRPSA.

An overall score on the PRPSA can range from 34-170. For all students in this study, their pre-intervention scores ranged from 156-98 with a mean of 128.7. The PRPSA post-intervention scores, in comparison, ranged from 144-85 with a mean of 118.9. Seven of the

ten students' scores indicated a decrease in anxiety on this measure from pre-intervention to post-intervention.

### Self-Statements during Public Speaking

The SSPS pre and post intervention scores range from 5 (positive thoughts) to 0 (negative thoughts) through 2.5 neutral thinking. The students' scores can be seen in Figure 2.



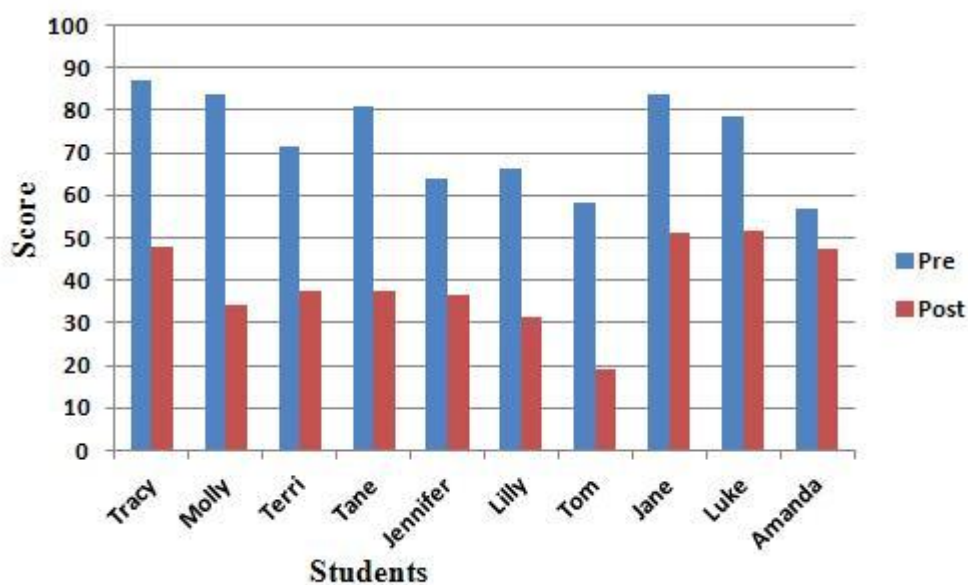
*Figure 2:* Pre-intervention and Post-intervention overall scores on the SSPS. The horizontal line at 2.5 represents neutral thinking. Above the line is regarded as more positive thinking and below the line is regarded as more negative thinking.

The students' individual thoughts varied with the majority initially scoring between 3.1 and 4. There were two students with extreme scores with one male, Tom, scoring 4.8 and another male, Tane, scoring 1.9. Post-intervention scores were varied again with the majority scoring between 2.9 and 4.2. The same two males scored at each end with 4.6 and 2. Six of

the ten students indicated increased positive thinking during public speaking from pre to post-intervention.

### **Behavioural Assessment of Speech Anxiety**

Overall scores on the BASA can range from 0 (the lowest score indicating no observable speech anxiety at all) to 162 (the highest score of observable speech anxiety). All of the students' pre and post intervention scores are shown in Figure 3.



*Figure 3: Pre-intervention and Post-intervention overall scores on the BASA.*

All students from pre- to post- intervention decreased their level of observable speech anxiety on the BASA measure. To assist with the identification of behavioural indicators for speech anxiety, and whether or not the students improved their fluency, the results for each of the five disfluency items are shown in the figures 4-8. Please note that apparently missing scores indicate the score was in fact zero.



## Disfluency.

### *Item 1 - Non fluent, stammers, halting gestures and repeated word*

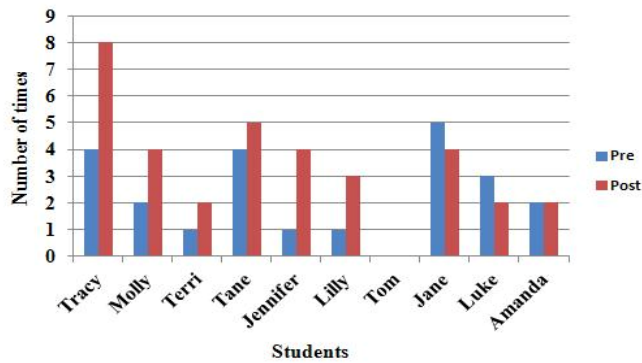


Figure 4: Pre-intervention and post-intervention scores of disfluency item no.1.

Figure 4 shows that six students were more non-fluent at post-intervention. The second item is shown on Figure 5 and this shows that all but one student decreased their disfluencies from pre-intervention to post-intervention, therefore, increasing their fluency.

### *Item 2 Vocalised pauses*

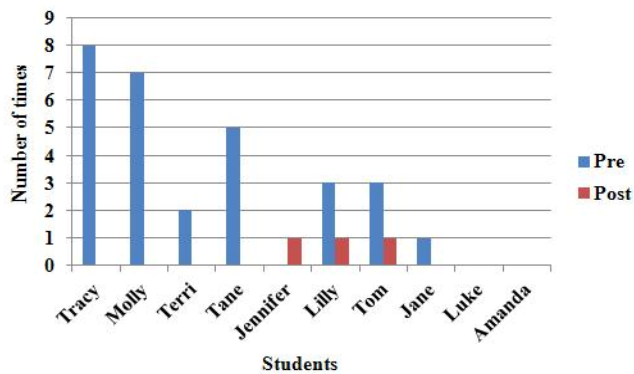


Figure 5: Pre-intervention and post-intervention scores of disfluency item no.2.

### *Item 3 – Hunts for words, speech blocks and long silences*

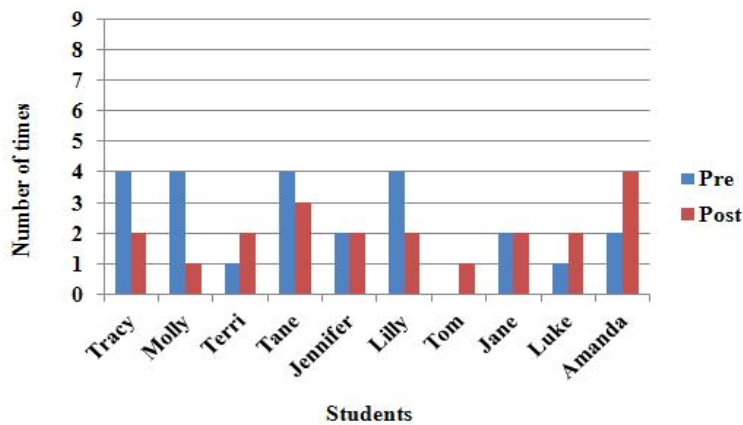


Figure 6: Pre-intervention and post-intervention scores of disfluency item no.3.

The results for disfluencies on the third item show on Figure 6 six of the students decreased their disfluencies from pre-intervention to post-intervention.

### *Item 4- Quivering or tense voice twitches*

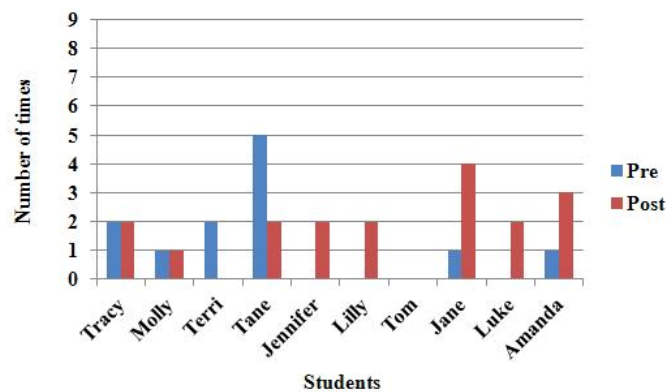


Figure 7: Pre-intervention and post-intervention scores of disfluency on item no.4.

The fourth item results show on Figure 7 five of the students decreased their disfluencies from pre-intervention to post-intervention.

### *Item 5- Breathes heavily, sniffs or sighs*

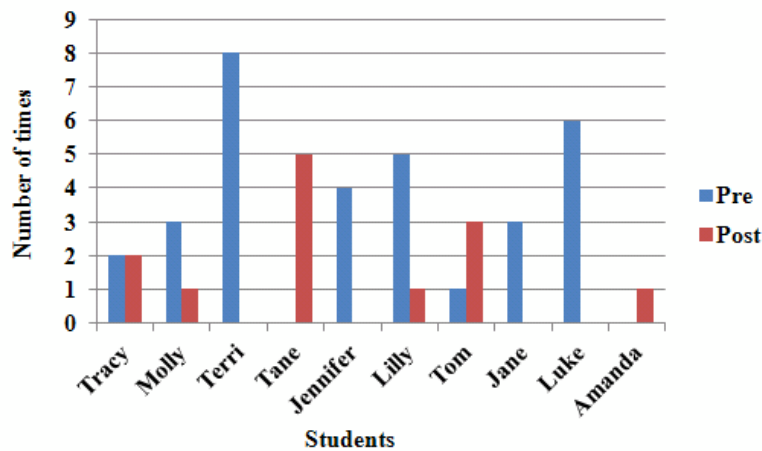


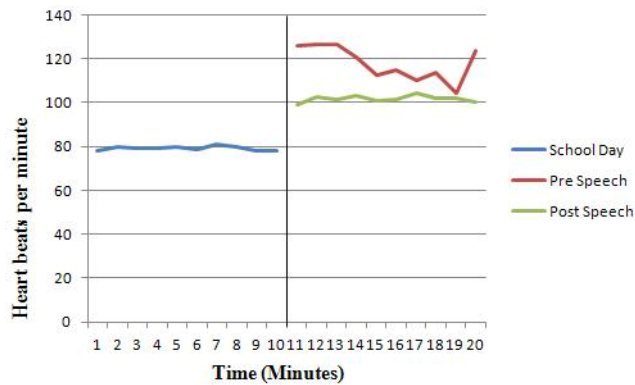
Figure 8: Pre-intervention and post-intervention scores of disfluency on item no.5.

The fifth and final item for disfluency showed that on Figure 8 seven students decreased their disfluencies from pre-intervention to post-intervention.

### **Heart Rate**

Overall, the four students wearing HR monitors showed an initial increase in HR before their speech, a decrease in HR while engaged in their speech in both the pre and post intervention conditions. Lilly and Jane demonstrated increases pre to post-intervention in their HR, under the post-VSM condition, which was in front of a live audience and graded, than under the less stressful pre-intervention condition (i.e. ungraded and in front of the researcher). Tom and Luke, on the other hand, demonstrated decreases pre to post-intervention in their HR. The four of the ten students' HR data is presented individually in the graphs below identifying three different conditions; a regular school day, pre-speech and post-speech.

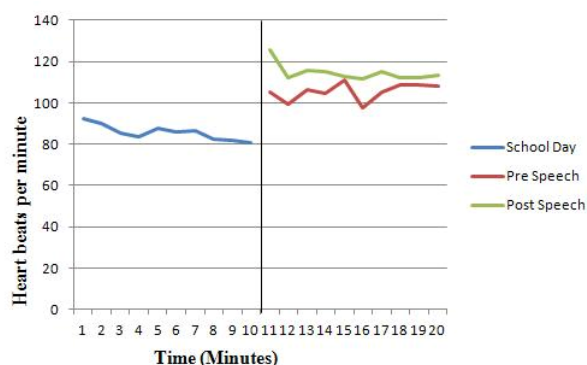
**Tom.**



*Figure 9: Tom's HR across three conditions (school day, pre- intervention speech and post- intervention speech).*

Figure 9 shows Tom's HR data firstly, while he is at school and engaged in regular activity. This figure also shows that Tim's HR increases when he is engaged in a public speaking activity compared with regular school day activities. The figure 9 also shows that during public speaking Tom's HR decreased from the pre-intervention condition compared to the post-intervention condition.

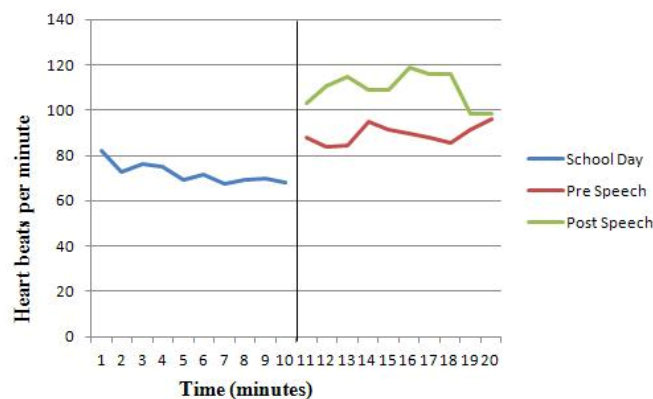
**Lilly.**



*Figure 10: Lilly's HR across three conditions (school day, pre- intervention speech and post- intervention speech).*

Figure 10 shows Lilly's HR data firstly, while she is at school and engaged in regular activity. This figure also shows that Lilly's HR increases when she is engaged in a public speaking activity compared with regular school day activities. Figure 10 also shows that during public speaking Lilly's HR increased from the pre-intervention condition to the post-intervention condition.

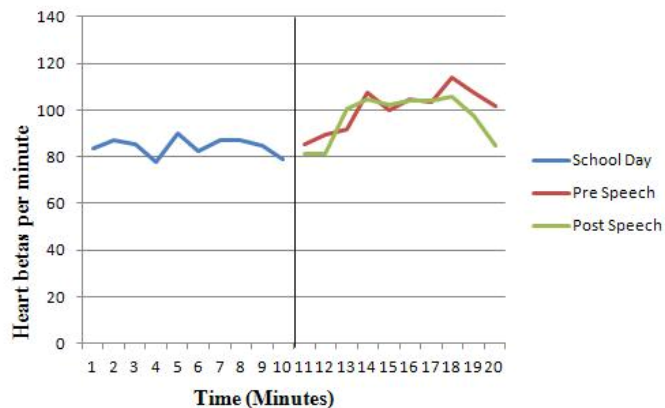
### Jane.



*Figure 11: Jane's HR across three conditions (school day, pre- intervention speech and post-intervention speech).*

Figure 11 shows Jane's HR data firstly, while she is at school and engaged in regular activity. This figure also shows that Jane's HR increases when she is engaged in a public speaking activity compared with regular school day activities. Figure 11 also shows that during public speaking Jane's HR increased from the pre-intervention condition to the post-intervention condition.

**Luke.**



*Figure 12: Luke's HR across three conditions (school day, pre- intervention speech and post-intervention speech).*

Figure 12 shows Luke's HR data firstly, while he is at school and engaged in regular activity. This figure also shows that Luke's HR increases when he is engaged in a public speaking activity compared with regular school day activities. The figure 12 also shows that during public speaking Luke's HR decreased from the pre-intervention condition compared to the post-intervention condition.

## **CHAPTER 4: Discussion**

The purpose of this research was to reduce anxiety levels in year 12 and 13 high school students whilst engaged in public speaking activities using video self-modelling (VSM) as the intervention. The study took place in a New Zealand high school senior English class as part of a NCEA assessment task in oral presentation. The selected students prepared and presented an initial speech that was videoed by the researcher. An individual video self-model vignette was created for each, depicting fluent speaking behaviours. The students

viewed their vignette between 5 and 8 times over a fortnight. All of the student's pre-intervention and post-intervention speeches were scored for behavioural and cognitive components of anxiety. In addition to the other measures four of the ten students heart rates (HR) were monitored because an increase in HR is an indicator of physiological anxiety. The following components of anxiety: cognitive, behavioural, and physiological anxiety, were investigated and are discussed in relation to the results and literature in the following paragraphs.

### **Cognitive**

The two self-report instruments used to measure the students' own thoughts surrounding public speaking anxiety were the Personal Report of Public Speaking Anxiety (PRPSA) and the Self –Statements during Public Speaking (SSPS). They were chosen because previous research suggests that perceptions of change in the self from past to present have implications for thinking about the future. The self-perception that one stores in memory may be informative not only about one's present state but about one's anticipated future as well.

The students' pre-intervention PRPSA scores indicated they were feeling anxious about the future prospect of public speaking. Results showed that 70% (7) of all the students self-reported less anxiety post intervention as measured on the PRPSA.

On the SSPS nearly all students scored more positive thoughts about public speaking than negative apart from one student. This particular student (Tane) indicated initially that he agreed with the statement 'a failure in this situation would be more proof of my incapacity'. He did change to strongly agreeing with this statement at post-intervention. He disagreed with another statement 'instead of worrying I could concentrate on what I want to say' but he surprisingly agreed with the statement at post-intervention in comparison with pre-

intervention. He strongly disagreed with the next statement ‘this is an awkward situation but I can handle it’ at pre-intervention and post. Overall, his self-statements indicated only slight changes towards more positive thinking. Although Tane’s rating may have previously had a strong tendency to avoid situations that evoke the emotion of anxiety, Tane did confront his fear which was indicated by his movement from disagree to strongly disagree. In the context of emotional disorders, by not cognitively or physically engaging in a task you could be avoiding a possible emotive response and memories are then depersonalised or made from an observer’s perspective. This theory of avoidance agrees with findings that state adopting an observer perspective is associated with less emotionality (Nigro & Neisser, 1983; Berntsen & Rubin, 2006). The VSM edited clips created from the student’s point of view of the feared situation, i.e., seeing the audience, and performing in an exemplary manner, allows the encoding of the necessary information to perform successfully in the future. In addition, Libby & Eibach (2002) state that past behaviour that is congruent with the current self is recalled in a more attached way than past behaviour that is incongruent. In Tane’s case this is supported by his movement in his self-reporting scores and borne out in the BASA scores as well. This tenement could influence how long it takes an individual to initially engage with an anxiety-producing situation in regard to their current self-concept. For example, Libby and Eibach (2002) showed in their research that when people think about a behaviour that is inconsistent with the current self-concept, they tend to see this event from the observer’s perspective and with less subjective feelings of reliving the visualised action than when they recall compatible past behaviours.

Cognitive research states that with both adults (Gilbert et al. 2002) and children (Attance & Meltzoff, 2006) MTT is extremely difficult, especially when one must anticipate a future state that directly conflicts with the current one. However, using the VSM as a visualisation technique promotes rapid learning as the VSM allows the student to see



themselves in the situation being successful compared to alternative techniques such as practising or coaching which are time consuming to implement.

## **Behavioural**

The overall results on the behavioural component of anxiety showed that all students from pre-intervention to post-intervention decreased their level of observable speech anxiety on the Behavioural Assessment of Speech Anxiety (BASA) which measured the factors rigidity, inhibition, disfluency, and agitation. Based on these results, using VSM as a rapid learning intervention in schools, students could be exposed to public speaking skills, skills which enable successful completion of a presentation, and if it is coupled with increased opportunity, they could become high-quality public speakers.

When viewed in detail the disfluency factor, results showed that six students decreased their fluency by having an increased number of stammers, halting gestures, and repeated words at the post-intervention speech. Of the ten students, nine increased their fluency by decreasing the number of ‘ums’, ‘uhs’, ‘annnds’, ‘soo’, etc. used from pre-intervention to post-intervention. Six of the students increased fluency from pre-intervention to post-intervention by indicating a lower number of long silences. These vocalised pauses and long silences were edited out from their pre-intervention speech to form the VSM vignette. Half of the students’ results showed they were less tense from pre-intervention to post-intervention. Seven of the 10 students increased their fluency by decreasing the number of heavy breaths, sighs and sniffs from pre-intervention to post-intervention. All sniffs, sighs and heavy breathing were edited out if they were present in the pre-intervention speech to form the VSM vignette.

Overall, the students did not improve on all five items of fluency; however, all of the students improved on their overall post-intervention performance. Interestingly, two

unexpected fluency results were found. Two individuals, Tracy and Molly, reported similar results whereby their non- fluency score increased on post observational results, and although their overall performance improved, their self-report scores were lower than their pre-test scores. A possible explanation for this is that their increase in observable anxiety such as stammering and repeating words may have contributed to the way they reported their own levels of anxiety. Furthermore they were being graded at post-intervention, a potentially a more anxiety-producing situation because of its importance. The VSM as an intervention may have increased their self-awareness through knowing what was desirable and they may have realised that they were not demonstrating this behaviour and therefore they became more anxious.

### **Heart rate**

An increase in Heart Rate is a physiological indicator of anxiety. Although HR data was variable across time and activities, all of the four students wearing HR monitors had a sudden rise in HR when the HR monitor was fitted and at the beginning of the public speaking presentation. They showed an initial increase in HR in anticipation of their speech and when they first started, and a decrease in HR while engaged in their speech, in both the pre-intervention and post-intervention conditions.

Even though the public speaking presentation was a higher stakes assessment, the HR was lower in 2 out of the 4 students. Given the higher stakes in the post-intervention condition, none of the four students' HRs was notably higher. This is evidence of the VSM leading to less anxiety in the post-intervention speech. Another finding of note is the slight increase in HR at post-intervention for the two female students. As mentioned in previous research, speakers exhibit more cognitive, physiological, and behavioural anxiety when exposed to audiences of greater size and expertise, when being graded, and when audiences

respond negatively (Beatty & Behkne, 1991; Booth-Butterfield, 1987; Harris et al., 2002). These factors may have increased the levels of anxiety in the two female students. Another plausible explanation for the increase in HR is that, instead of anxiety, the students felt satisfaction and joy because of the management of their communication skills; however, this is unlikely as there was no feedback from the researcher to indicate that this was the case. All that the students had as feedback was their own self perception of the viewed task and the audience response. The two males had lower HR under post-intervention conditions.

The oral presentation was not an activity the students did every day at school. It was deemed a skill to be learned and practised so they could do it with less difficulty in the future. It was also a task that was assessed and graded, was important to them and could influence their thoughts, behaviour, and sense of identity (Pillemer, 1998) Therefore, the current study's results of increased HRs could be linked to research that suggests that an emotional task with an unexpected or important outcome can elicit anxiety.

Anderson and Hope (2009) found that performing a public speaking task produces increases in HR for adolescents with or without a clinical diagnosis of anxiety. Two studies specifically report that performing a public speaking task is one of the most common anxiety provoking situations that adolescents find themselves in (Beidel & Randall, 1994; Griffen & Bradley, 1969). In addition, previous studies indicate that HR peaks in the minute before the speech begins and the first minute of the speech (Behkne & Sawyer, 1998, 1999a; Finn, Sawyer, & Behkne, 2003; Porhola, 1999). The initial 'indication of stress' shown by all the students wearing HR monitors in the public speaking situation could be related to a heightened level of anxiety within the student in anticipation of, or during, public speaking which may impact their performance both cognitively and behaviourally.

## **Strengths and limitations**

Anticipating one's own future mental state is complicated and often influenced by one's current state. However, the advantage of using VSM is its efficiency in time engaged in the actual intervention, approximately two minutes, usually six times over a fortnight equalling 12 minutes aside from the construction of the video. All of the students viewed their VSM between 5 and 8 times staggered over 2 weeks, which is the standard recommendation (Dorwick, 1999). D'Argembeau and Van der Linden (2004) study stated that seeing the self in the future in detail results in a clearer representation when the event is expected to be experienced in the near future rather than in a more distant future. Sedikides and Green (2000) mentioned that it takes minimal processing time to recall self-referent positive information, such as is presented in a VSM.

Using the self as a model makes the intervention more personally significant and this could increase the likelihood of the information, from the video self model, being projected into future thinking (Bandura, 1997; Dorwick, 2012). In addition to the ability to time travel in VSM it presents not only with a picture of future events, but also the likely emotional impact that goes with the situation. The VSM can bring about strong emotions and increase self-awareness. It is important to consider not only how the anticipation of a future scenario can influence behaviour in the present, but also how a current desire can ensure that action, which could bring the person closer to achieving their future goal.

Some teenagers have the tendency to be involved with a number of conflicting activities hence the importance of having a clear goal and perception of the advantages to be gained from participation in the intervention. It was also deemed necessary to assure the participants that the intervention was short-term and not time-consuming otherwise, the students may have lost interest and not fully engaged with the VSM. A time-consuming

process would most likely mean competition with other current activities. Therefore, a time efficient process may have suited the students as they could fully attend for a short-period of time and work towards achieving a goal that was attainable in the near future.

Mentally constructing and reconstructing episodes reactivates memory, therefore, viewing the VSM a number of times could strengthen potential activation of the VSM and enable the visualisations to appear to be “fresher” in memory than warranted by age alone. This could then mean that the short-term goal be valid over time and could stay with them in the longer-term. In addition, the students knew that the time of their public presentation was near and this could have meant that they were already beginning to adapt their behaviour in order to achieve. To support this idea, the students all decided to participate in the study and showed that they were already adapting their behaviour and that from this point they indicated motivation to achieve their goal of speaking well in front of an audience.

For the students to be able to encode the VSM there needed to be an emotional element associated with the event, this could increase the desire of retrieval of the experience of the public speaking event as a memory. Strength for the use of VSM is that it provided self relevant information in the situation of public speaking, and according to the cognitive appraisal theory of emotion, self-relevance is a key characteristic of an emotional experience (Lazarus, 1982). In addition, the emotional intensity that could be experienced during MTT has been found to be associated with the degree of self-relevance the event has to the individual (Berntsen & Bohn, 2010). Therefore, the VSM’s function target behaviour (improving public speaking performance) needed to be important to the individual and relevant to the student’s life story.

There are some limitations to using a self-report measure, for example, some student’s may be reluctant to report their anxiety level with fear of being judged. Some students may

report by using extremely high and low ratings while others may stick closely to average ratings (Sattler & Hoge, 2006). However, self-reports were included in this study to provide insight into the cognitive component of the individual's current self-concept and self-perception in regards to speaking in public. They also appeared to offer insight into not only the individual's present state but into his or her future as well.

The students all showed less observable anxiety during their post-intervention performance than pre-intervention, although, at post-intervention, the students did not necessarily self-report feelings of experiencing less anxiety. The research suggests that attributing past behaviour to an old self proposes that if the same circumstances arise again, the new self will act differently. However, the circumstances did change from pre-intervention, from only presenting to the researcher, compared to performing in front of an actual live audience post intervention. This could explain why the students' self-report scores did not indicate as much change because the post situation was considered a more nerve-racking situation.

If the students interpreted the prospect of speaking in public differently or had changed self-concepts this could be responsible for a changed reaction to the situation. The VSM could have been responsible for helping the change which could be identified through the behavioural changes.

### **Future suggestions**

As developmental behavioural studies have already mentioned, older adults, compared with younger adults, show reduced specificity both in their recall of past episodes and their imaginings of possible future episodes. This emphasises the importance of working with teenagers and the benefits that can come out of providing interventions and prevention strategies for this age group in particular. Typical development during adolescence suggests a

rapid period of growth and change. The adolescent's self-concept is still in formation and most memories are encountered. Therefore, this research calls for more studies investigating how teenagers encode, store, and retrieve behavioural information through modelling and further investigation into the relationship between constructing memories and the present self-concept.

The results from this study and investigation into the cognitive component of anxiety calls for other studies to investigate how VSM could influence the combination of different types of information that are encoded. For example, if an individual has inconsistent self-knowledge of the VSM process, how do they form an overall impression of the desired performance? Does their perception of the outcome depend on their current assessment of their own performance and whether the future scenario could be a realistic expectation? Furthermore, if the current self-concept is negative, then could the integration of some form of cognitive treatment such as Cognitive Behavioural Therapy (CBT), alongside VSM, be more beneficial? CBT could be used as an intervention, specifically targeting and manipulating the self-perspective to improve the prospects of constructing positive memories, in combination with VSM, to help with self-relevance. This could result in not only behavioural but cognitive changes too.

## **Conclusion**

This current study showed that VSM may be used as an application tool for all students being assessed on a public performance within a safe, supportive environment. It also shows it could help to develop and enhance useful and practical life skills for situations beyond school in which students may experience similar pressure to perform publicly. This research supports Bandura's idea of believing that positive self-conceptions can facilitate the process of new positive behaviours and that implementing the technique of VSM can relay

the self-referent information. In addition, the optimism for future improvement that is associated with self-perceptions of change may contribute to the achievement of objective, subjective and physiological changes in the self for where they anticipate heading in the future. Finally, the success of the VSM intervention, especially with regards to the students' observable behavioural changes, has been reflected in a decreased level of anxiety.

In essence, throughout the current study, the four components for successful modelling (*attention, retention, reproduction* and *motivation*) featured, and all stood out as key parts of the process. Regarding *attention*, the students participated and recognised themselves in the video self model. They carried out *retention* by observing the video self model a number of times. To maintain the skills observed, *reproduction* meant that the students had the opportunity to practise and learn the viewed behaviour. The students each shared the same self-enhancement goal, to achieve their oral presentation assessment, and the public speaking event was probably perceived as highly connected to the students' current purposes, goals and *motivation* to be successful.



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## APPENDIX A



### HUMAN ETHICS COMMITTEE

Secretary, Lynda Griffioen  
Email: [human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)

Ref: 2012/26/ERHEC

25 July 2012

Liz Gilchrist  
School of Educational Studies & Human Development  
UNIVERSITY OF CANTERBURY

Dear Liz

Thank you for providing the revised documents in support of your application to the Educational Research Human Ethics Committee. I am very pleased to inform you that your research proposal "The effects of video self modelling as an intervention for teenagers with public speaking anxiety" has been granted ethical approval.

Please note that should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval, please let me know.

We wish you well for your research.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Nicola Surtees'.

Nicola Surtees  
Chair  
Educational Research Human Ethics Committee

*"Please note that Ethical Approval and/or Clearance relates only to the ethical elements of the relationship between the researcher, research participants and other stakeholders. The granting of approval or clearance by the Ethical Clearance Committee should not be interpreted as comment on the methodology, legality, value or any other matters relating to this research."*

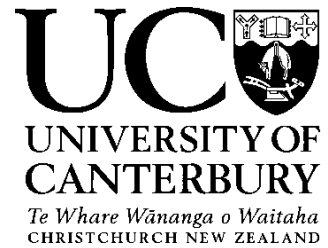
## APPENDIX B

Liz Gilchrist

Telephone: 027 6998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



### **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

#### **Information Sheet for Students**

I am a post graduate student at the College of Education, University of Canterbury. I am interested in using Video Self-Modeling (VSM), as an intervention because I believe it could provide an opportunity for teenagers to be less anxious and better at public speaking and previous research has supported this. The current study is specifically concentrating on VSM to aid public speaking performance in teenagers with public speaking anxiety and should be of benefit to students producing an oral presentation for assessment.

I would like to invite you to participate in this study. If you agree to take part you will be asked to do the following:

- The completion of a questionnaire on public speaking anxiety. This will take approximately 10 minutes, as part of your English class. You will also be asked to complete a small number of speech tasks over approximately two weeks which will also be incorporated into your English classes.
- You will deliver short speech passages and these will be videoed in a withdrawal area with only the researcher and yourself present. The video will be created which may entail editing in an audience. The researcher (Liz Gilchrist) will do this. The aim of the editing process will be to produce your best public speaking performance. You will need to view your edited video at least 6 times over the following two weeks.
- The researcher will be present while you are performing your speech. From the video footage your anxiety levels will be measured. And you'll be asked to fill out a short questionnaire about how you felt during the delivery of your speech. A heart rate monitor will be worn by you to measure your heart rate at rest, giving a speech and after watching your own video. A comparison will be made of the measures taken before, during and after the public speaking tasks and again after the VSM has been viewed.

Participation is voluntary. You can withdraw from the study if this remains practically achievable.

All data gathered in this study will be confidential to the researcher, supervisory team and two trained observers. Your anonymity in publications of the findings will be protected. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. My thesis, when completed, will be publically available in the UC Library. The findings may be published in journal articles and presented at conferences, however all names and features will be changed so you and the school can't be identified.

If you have any questions about the study, please contact me (details above). If you have a complaint about the study, you may contact The Chair of Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)).

If you agree to participate in this study, please complete the attached consent form and return it to me in the envelope provided by the [day/month]. Thank you for considering this invitation to participate

Liz Gilchrist

Telephone: 027 6998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012

## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Information Sheet for Teachers**

I am a post graduate student at the College of Education, University of Canterbury. I am interested in using Video Self-Modeling (VSM), as an intervention to help teenagers to recognize their potential to reach their desired goals in formal assessment situations that they may be anxious about. The current study is specifically concentrating on VSM to aid public speaking performance in teenagers and should be of benefit to students who are anxious about producing an oral presentation for assessment. I would like to invite you and your students from your English class to take part in this study when you are working on preparation for oral presentations. The students would be identified through the completion of a questionnaire on public-speaking anxiety and/or referral by you as the teacher. Up to 10 students would be recruited for the main part of the study. At least another 10 students would be needed to help out as an audience that would be filmed separately. If you agree to take part in this, it will involve the following:

- The researcher will administer a 10 minute screening test that will involve students completing a questionnaire on public speaking anxiety, at the start of your English class. Preparation of a small number of speech tasks will be organized by the researcher to incorporate with your English oral assessment standard procedure, over approximately two weeks.
- All participant students will deliver short speech passages and these will be videoed in a withdrawal area with only the researcher and the student present. An edited video will be created which may entail cutting in an audience. The researcher (Liz Gilchrist) will do this. The aim of the editing process will be to produce the student's best public speaking performance. The students will need to view their edited video at least 6 times over the following two weeks. Daily viewing will take place at an arranged time between student and researcher during interval or lunchtime.
- Audience members will be videoed, in a role played situation, in your classroom. Their role will be to play an attentive audience member. As an audience member, they will not be a participant in the main part of the study and data will not be collected about them, however the video starring them will be used to help assist in the main part of study.
- Liz will take full responsibility for organizing the equipment and assessment measures needed with minimal disruption to normal classroom procedures. The expectations are that you as a teacher will be responsible for the normal teaching of the oral presentations requirements.

Participation is voluntary. The students can withdraw from the study if this remains practically achievable. All data gathered in this study will be confidential to the researcher, supervisory team and two trained observers. Your anonymity in publications of the findings will be protected. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. My thesis, when completed, will be publically available in the UC Library. The findings may be published in journal articles and presented at conferences, however all names and features will be changed so you and the school can't be identified. If you have any questions about the study, please contact me (details above). If you have a complaint about the study, you may contact The Chair of Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)). If you agree to participate in this study, please complete the attached consent form and return it to me in the envelope provided by the [day/month]. Thank you for considering this invitation to participate

Liz Gilchrist

Telephone: 027 6998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012

## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Information Sheet for Principal**

I am a post graduate student at the College of Education, University of Canterbury. I am interested in using Video Self-Modeling (VSM), as an intervention to help teenagers to recognize their potential to reach their desired goals in formal assessment situations that they may be anxious about. The current study is specifically concentrating on VSM to aid public speaking performance in teenagers and should be of benefit to students who are anxious about producing an oral presentation for assessment. I would like to invite your school to take part in this study. The students would be identified through the completion of a questionnaire on public-speaking anxiety and/or referral by an English teacher. Up to 10 students would be recruited for the main part of the study. At least another 10 students would be needed to help out as an audience that would be filmed separately. If your school agrees to take part in this, it will involve the following for the students/teachers:

- The completion of a questionnaire on public speaking anxiety. This will take approximately 10 minutes, as part of an English class. The students will be asked to complete a small number of speech tasks over approximately two weeks. These will be in their English classes.
- The students will deliver short speech passages and these will be videoed in a withdrawal area with only the researcher and the student present. The video will be created which may entail editing in an audience. The researcher (Liz Gilchrist) will do this. The aim of the editing process will be to produce their best public speaking performance. The student will need to view their edited video at least 6 times over the following two weeks.
- The students' performances on video will be measured using an observation scale to ascertain anxiety levels along with heart rate monitoring.
- Audience members will be videoed, in a role played situation, in the classroom. For example, listening to a speaker and applauding at appropriate times. This will be edited in to make a VSM for the participants in my study. As an audience member, they will not be a participant in the main part of the study and data will not be collected about them, however the video starring them will be used for the participants in my study.

Liz will take full responsibility for organizing the equipment and assessment measures needed with minimal disruption to normal classroom procedures. The expectations are that the English teacher will be responsible for the normal teaching of the standard oral presentation requirements. Participation is voluntary. Your school can withdraw from the study if this remains practically achievable. All data gathered in this study will be confidential to the researcher, supervisory team and two trained observers. Your anonymity in publications of the findings will be protected. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. My thesis, when completed, will be publically available in the UC Library. The findings may be published in journal articles and presented at conferences, however all names and features will be changed so you and the school can't be identified. If you have any questions about the study, please contact me (details above). If you have a complaint about the study, you may contact The Chair of Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)). If you agree to participate in this study, please complete the attached consent form and return it to me in the envelope provided by the [day/month]. Thank you for considering this invitation to participate

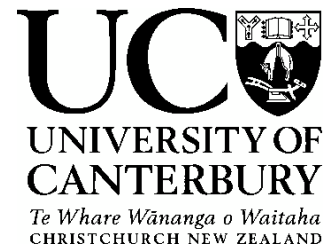


Liz Gilchrist

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Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Information Sheet for Parents / Guardians**

I am a post graduate student at the College of Education, University of Canterbury. I am interested in using Video Self-Modeling (VSM), as an intervention because I believe it could provide an opportunity for teenagers to be less anxious and better at public speaking and previous research has supported this. The current study is specifically concentrating on VSM to aid public speaking performance in teenagers with public speaking anxiety and should be of benefit to students producing an oral presentation for assessment.

I would like to invite your child to participate in this study. If they agree to take part they will be asked to do the following:

- The completion of a questionnaire on public speaking anxiety. This will take approximately 10 minutes, as part of their English class.
- Your child will be asked to complete a small number of speech tasks over approximately two weeks. These will be part of their English classes.
- Your child will deliver short speech passages and these will be videoed in a withdrawal area with only the researcher and the child present. The video will be created which may entail editing in an audience. The researcher (Liz Gilchrist) will do this. The aim of the editing process will be to produce the student's best public speaking performance. They will need to view their edited video at least 6 times over the following two weeks while at school.
- The students' performances on video will be measured using an observation scale to ascertain anxiety levels along with heart rate monitoring.

Please note that participation in this study is voluntary. If your child does participate, you have the right to withdraw them from the study if this remains practically achievable. All data gathered in this study will be confidential to the researcher, supervisory team and two trained observers. Your anonymity in publications of the findings will be protected. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. My thesis, when completed, will be publically available in the UC Library. The findings may be published in journal articles and presented at conferences, however all names and features will be changed so you and the school can't be identified.

If you have any questions about the study, please contact me (details above). If you have a complaint about the study, you may contact The Chair of Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)).

If you agree to your child participating in this study, please complete the attached consent form and return it to me in the envelope provided by the [day/month].

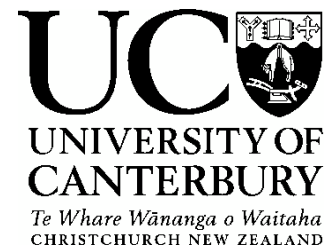
Thank you for considering this invitation to participate

Liz Gilchrist

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09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Information Sheet for Chair of the Board of Trustees**

I am a post graduate student at the College of Education, University of Canterbury. I am interested in using Video Self-Modeling (VSM), as an intervention to help teenagers to recognize their potential to reach their desired goals in formal assessment situations that they may be anxious about. The current study is specifically concentrating on VSM to aid public speaking performance in teenagers and should be of benefit to students who are anxious about producing an oral presentation for assessment. I would like to invite your school to take part in this study. The students would be identified through the completion of a questionnaire on public-speaking anxiety and/or referral by an English teacher. Up to 10 students would be recruited for the main part of the study. At least another 10 students would be needed to help out as an audience that would be filmed separately. If your school agrees to take part in this, it will involve the following for the students/teachers:

- The completion of a questionnaire on public speaking anxiety. This will take approximately 10 minutes, as part of an English class. The students will be asked to complete a small number of speech tasks over approximately two weeks. These will be in their English classes.
- The students will deliver short speech passages and these will be videoed in a withdrawal area with only the researcher and the student present. The video will be created which may entail editing in an audience. The researcher (Liz Gilchrist) will do this. The aim of the editing process will be to produce their best public speaking performance. The student will need to view their edited video at least 6 times over the following two weeks.
- The students' performances on video will be measured using an observation scale to ascertain anxiety levels along with heart rate monitoring.
- Audience members will be videoed, in a role played situation, in the classroom. For example, listening to a speaker and applauding at appropriate times. This will be edited in to make a VSM for the participants in my study. As an audience member, they will not be a participant in the main part of the study and data will not be collected about them, however the video starring them will be used for the participants in my study.

Liz will take full responsibility for organizing the equipment and assessment measures needed with minimal disruption to normal classroom procedures. The expectations are that the English teacher will be responsible for the normal teaching of the standard oral presentation requirements. Participation is voluntary. Your school can withdraw from the study if this remains practically achievable. All data gathered in this study will be confidential to the researcher, supervisory team and two trained observers. Your anonymity in publications of the findings will be protected. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. My thesis, when completed, will be publically available in the UC Library. The findings may be published in journal articles and presented at conferences, however all names and features will be changed so you and the school can't be identified. If you have any questions about the study, please contact me (details above). If you have a complaint about the study, you may contact The Chair of Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)). If you agree to participate in this study, please complete the attached consent form and return it to me in the envelope provided by the [day/month]. Thank you for considering this invitation to participate

Liz Gilchrist

Telephone: 027 6998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Information Sheet for Student Audience**

I am a post graduate student at the College of Education, University of Canterbury. I am interested in using Video Self-Modeling (VSM), as an intervention because I believe it could provide an opportunity for teenagers to be less anxious and better at public speaking and previous research has supported this. The current study is specifically concentrating on VSM to aid public speaking performance in teenagers with public speaking anxiety and should be of benefit to students producing an oral presentation for assessment.

I would like to invite you to participate as an audience member in this study. If you agree to take part you will be asked to do the following:

- Be videoed as an audience member in a role-play situation in your classroom. This will be edited in to make a VSM for the other students in my study.
- Your role will be to play as an attentive audience member. For example, leaning forward, looking in the direction of the speaker, listening to a speaker and applauding at appropriate times.
- The video will be taken from a speaker's point of view, the final clip will only need to be about 10sec in length to help assist in the main part of the study.
- As an audience member, you will not be a participant in the main part of the study and data will not be collected about you, however the video starring you will be used for the participants in my study.

Please note that participation in this study is voluntary. If you do participate, you have the right to withdraw from the study if this remains practically achievable.

All data gathered in this study will be confidential to the researcher, supervisory team and two trained observers. Your anonymity in publications of the findings will be protected. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. My thesis, when completed, will be publically available in the UC Library. The findings may be published in journal articles and presented at conferences, however all names and features will be changed so you and the school can't be identified.

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If you agree to participate in this study, please complete the attached consent form and return it to me in the envelope provided by the [day/month].

Thank you for considering this invitation to participate

Liz Gilchrist

Telephone: 027 6998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012

## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Information Sheet for Student Audience Parent / Guardian**

I am a post graduate student at the College of Education, University of Canterbury. I am interested in using Video Self-Modeling (VSM), as an intervention because I believe it could provide an opportunity for teenagers to be less anxious and better at public speaking and previous research has supported this. The current study is specifically concentrating on VSM to aid public speaking performance in teenagers with public speaking anxiety and should be of benefit to students producing an oral presentation for assessment.

I would like to invite your child to participate as an audience member in this study. If you agree for them to take part they will be asked to do the following:

- Be videoed as an audience member in a role-play situation in their classroom. This will be edited in to make a VSM for the other students in my study.
- The role will be to play an attentive audience member. For example, leaning forward, looking in the direction of the speaker, listening to a speaker and applauding at appropriate times.
- The video will be taken from a speaker's point of view, the final clip will be about 10sec in length to help assist in the main part of the study.
- As an audience member, your child will not be a participant in the main part of the study and data will not be collected about them, however the video starring your child will be edited in to the VSM videos of participants in my study.

Please note that participation in this study is voluntary. If your child does participate, you have the right to withdraw them from the study if this remains practically achievable.

All data gathered in this study will be confidential to the researcher, supervisory team and two trained observers. Your child's anonymity in publications of the findings will be protected. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. My thesis, when completed, will be publically available in the UC Library. The findings may be published in journal articles and presented at conferences, however all names and features will be changed so you and the school can't be identified.

If you have any questions about the study, please contact me (details above). If you have a complaint about the study, you may contact The Chair of Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)).

If you agree to participate in this study, please complete the attached consent form and return it to me in the envelope provided by the [day/month].

Thank you for considering this invitation to participate

Telephone: 0276998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012

## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Consent Form Students**

I have been given a full explanation of this research study and have been provided with the opportunity to ask questions. I understand what will be required of me if I agree to take part in this research study.

I understand that my participation is voluntary and that I may withdraw from the study if this remains practically achievable.

I understand that videoing will all be arranged around my normal English classroom routines and practices, and that daily viewing of my videos will take place at an arranged time during interval or lunchtime.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me. I understand that the thesis is a public document and will be available through the UC Library.

I understand that any information collected about me and the video footage taken in the classroom will not be told or shown to anyone outside the supervision team or the teacher, and it will be stored in locked storage at Canterbury University. Liz will not use my name, teachers or school names in the thesis, any publications or conference presentations. A copy of my video and a summary of results of the project will be given to me.

I understand that all raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. This is standard procedure in accordance with the University of Canterbury Policy.

I understand that if I require further information I can contact the researcher, Liz Gilchrist or supervisors Lawrence Walker ([lawrence.walker@canterbury.ac.nz](mailto:lawrence.walker@canterbury.ac.nz)) and Karyn France ([karyn.france@canterbury.ac.nz](mailto:karyn.france@canterbury.ac.nz)). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([humanethics@canterbury.ac.nz](mailto:humanethics@canterbury.ac.nz)).

By signing below, I agree to participate in this research project.

Student's Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Telephone: 0276998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Consent Form Teachers**

I have been given a full explanation of this research study and have been provided with the opportunity to ask questions.

I understand what will be required of me if I agree to take part in this research study.

I understand that my students' participation is voluntary and that they may withdraw from the study if this remains practically achievable.

I understand that you will organize equipment and that assessment of measures and videoing will all be arranged around my normal English classroom routines and practices and that you will be responsible for the daily viewing of the students' videos which will take place at an arranged time with the student during interval or lunchtime.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me or my school.

I understand that all raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. This is standard procedure in accordance with the University of Canterbury Policy.

I understand that if I require further information I can contact the researcher, Liz Gilchrist or supervisors Lawrence Walker ([Lawrence.walker@canterbury.ac.nz](mailto:Lawrence.walker@canterbury.ac.nz)) and Karyn France ([karyn.france@canterbury.ac.nz](mailto:karyn.france@canterbury.ac.nz)). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([humanethics@canterbury.ac.nz](mailto:humanethics@canterbury.ac.nz)).

By signing below, I agree to participate in this research project.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Telephone: 027 6998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Consent form for Parents / Guardians**

I have read the Information Sheet and have had the details of the study explained to me.

My questions have been answered to my satisfaction and I understand that I may ask further questions at any time.

I understand that my child will be videoed including sound.

I understand that all information collected will be accessed only by the researcher, teacher and their supervision team and that it will be kept confidential and secure.

I understand that my child and their school will not be identified in any presentations or publications that draw on this research.

I understand that my child's participation is voluntary and they may choose to withdraw from the study if this remains practically achievable.

I understand that I can receive a report of the findings of the study, to do with my child. I have written my email address below for the report to be sent to.

I understand that if I require further information I can contact the researcher, Liz Gilchrist or supervisors Lawrence Walker ([lawrence.walker@canterbury.ac.nz](mailto:lawrence.walker@canterbury.ac.nz)) and Karyn France ([karyn.france@canterbury.ac.nz](mailto:karyn.france@canterbury.ac.nz)). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([humanethics@canterbury.ac.nz](mailto:humanethics@canterbury.ac.nz)).

I agree for my child \_\_\_\_\_ to participate in this study under the conditions set out in the Information Sheet.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Telephone: 027 6998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Consent form for Principal**

I have been given information on the research study to be undertaken and I understand the requirements and processes involved in this project. I have had the opportunity to ask questions and I have received answers to these.

I understand that I may, at any time withdraw access to school staff and students if this remains practically achievable.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me or my school.

I understand that all raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. This is standard procedure in accordance with the University of Canterbury Policy.

I understand that if I require further information I can contact the researcher, Liz Gilchrist or supervisors Lawrence Walker ([Lawrence.walker@canterbury.ac.nz](mailto:Lawrence.walker@canterbury.ac.nz)) and Karyn France ([karyn.france@canterbury.ac.nz](mailto:karyn.france@canterbury.ac.nz)). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([humanethics@canterbury.ac.nz](mailto:humanethics@canterbury.ac.nz)).

By signing below, I agree to participate in this research project.

I agree that \_\_\_\_\_ is able to recruit participants from  
my school \_\_\_\_\_ for the purposes of carrying out this study.

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_



Telephone: 027 6998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Consent form for Chair of Board of Trustees**

I have been given information on the research study to be undertaken and I understand the requirements and processes involved in this project. I have had the opportunity to ask questions and I have received answers to these.

I understand that I may, at any time withdraw access to school staff and students if this remains practically achievable.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me or my school.

I understand that all raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. This is standard procedure in accordance with the University of Canterbury Policy.

I understand that if I require further information I can contact the researcher, Liz Gilchrist or supervisors Lawrence Walker ([Lawrence.walker@canterbury.ac.nz](mailto:Lawrence.walker@canterbury.ac.nz)) and Karyn France ([karyn.france@canterbury.ac.nz](mailto:karyn.france@canterbury.ac.nz)). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([humanethics@canterbury.ac.nz](mailto:humanethics@canterbury.ac.nz)).

By signing below, I agree to participate in this research project.

I agree that \_\_\_\_\_ is able to recruit participants from

our school \_\_\_\_\_ for the purposes of carrying out this study.

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_

Telephone: 0276998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Consent Form Student Audience**

I have been given a full explanation of this research study and have been provided with the opportunity to ask questions.

I understand what will be required of me if I agree to take part in this research study.

I understand that my participation is voluntary and that I may withdraw at any stage from the study if this remains practically achievable.

I understand that I will be videoed for the purpose of being filmed as an audience for a VSM project. The video footage taken of me will be under an instructional role play situation.

I understand that any information collected about me and the video footage taken in the classroom will not be told or shown to anyone else and it will be stored in locked storage at Canterbury University. Liz will not use my name, teachers or school names in the research study.

I understand that if I do not want to be in the study I just need to tell you now and I will not have to.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me.

I understand that all raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. This is standard procedure in accordance with the University of Canterbury Policy.

I understand that if I require further information I can contact the researcher, Liz Gilchrist or supervisors Lawrence Walker ([lawrence.walker@canterbury.ac.nz](mailto:lawrence.walker@canterbury.ac.nz)) and Karyn France ([karyn.france@canterbury.ac.nz](mailto:karyn.france@canterbury.ac.nz)). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([humanethics@canterbury.ac.nz](mailto:humanethics@canterbury.ac.nz)).

By signing below, I agree to participate in this research project.

Student's Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Telephone: 0276998223

Email: [liz.gilchrist@pg.canterbury.ac.nz](mailto:liz.gilchrist@pg.canterbury.ac.nz)

09/06/2012



## **The Effects of Video Self-Modeling as an Intervention for Teenagers with Public Speaking Anxiety**

### **Consent Form Student Audience Parent / Guardian**

I have been given a full explanation of this research study and have been provided with the opportunity to ask questions.

I understand what will be required of my child if they agree to take part in this research study.

I understand that their participation is voluntary and that they may withdraw at any stage from the study if this remains practically achievable.

I understand that they will be videoed for the purpose of being filmed as an audience for a VSM project. The video footage taken of them will be under an instruction for a role play situation.

I understand that any information collected about them and the video footage taken in the classroom will not be told or shown to anyone else and it will be stored in locked storage at Canterbury University. Liz will not use my name, teachers or school names in the research study.

I understand that if they do not want to be in the study I just need to tell you now and I will not have to.

I understand that any information or opinions I provide will be kept confidential to the researcher and that any published or reported results will not identify me.

I understand that all raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed. This is standard procedure in accordance with the University of Canterbury Policy.

I understand that if I require further information I can contact the researcher, Liz Gilchrist or supervisors Lawrence Walker ([lawrence.walker@canterbury.ac.nz](mailto:lawrence.walker@canterbury.ac.nz)) and Karyn France ([karyn.france@canterbury.ac.nz](mailto:karyn.france@canterbury.ac.nz)). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([humanethics@canterbury.ac.nz](mailto:humanethics@canterbury.ac.nz)).

By signing below, I agree to participate in this research project.

Parent / Guardian Name: \_\_\_\_\_ your child's Name \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## APPENDIX D

30<sup>th</sup> August

### Pre-test speech preparation

Thank you for participating in this research study. I would like to invite you to prepare a 2-3minute presentation on your current research topic. This will be the piece that you will be filmed presenting to me and which I will be editing. You will need to have this ready for me to film you presenting it to me during the week starting Monday 3<sup>rd</sup> September.

Please follow these guidelines:

No more than 300 words. The presentation should be like the introduction to your assessed speech but it is only a draft version. You should write about the following:

What is your research topic?

Why did you choose this topic?

What questions will you be asking?

How will you research for the answers?

What resources (Texts) are you using?

What do you expect to find out from your collected information?

Briefly discuss one interesting thing you have discovered so far.

Treat it as a practice (This is just a guideline)

Thank you

Liz

## APPENDIX E

### HEART RATE DIARY

Name \_\_\_\_\_

Date \_\_\_\_\_

Time	Activity	How relaxed are you feeling? (1= relaxed – 5= tense)
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5

## APPENDIX F

### Personal Report of Public Speaking Anxiety (PRPSA)

Name \_\_\_\_\_

Date \_\_\_\_\_

☐ Male ☐ Female



This instrument is composed of thirty-four statements concerning feelings about communicating with other people. Indicate the degree to which the statements apply to you by marking whether you strongly agree, agree, undecided, disagree or strongly disagree with each statement. Work quickly and record your first impression.

Issues	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. While preparing for giving a speech, I feel tense and nervous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I feel tense when I see the words <i>speech</i> and <i>public speech</i> on a course outline when studying.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. My thoughts become confused and jumbled when I am giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Right after giving a speech I feel that I have had a pleasant experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I get anxious when I think about a speech coming up.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
6. I have no fear of giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Although I am nervous just before starting a speech, I soon settle down after starting and feel calm and comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I look forward to giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. When the instructor announces a speaking assignment in class, I can feel myself getting tense.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. My hands tremble when I am giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
11. I feel relaxed while giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I enjoy preparing for a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I am in constant fear of forgetting what I prepared to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I get anxious if someone asks me something about my topic that I do not know.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I face the prospect of giving a speech with confidence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
16. I feel that I am in complete possession of myself while giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. My mind is clear when giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I do not dread giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I perspire just before starting a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. My heart beats very fast just as I start a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
21. I experience considerable anxiety while sitting in the room just before my speech starts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Certain parts of my body feel very tense and rigid while giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Realizing that only a little time remains in a speech makes me very tense and anxious.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. While giving a speech I know I can control my feelings of tension and stress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I breathe faster just before starting a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
26. I feel comfortable and relaxed in the hour or so just before giving a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I do poorer on speeches because I am anxious.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I feel anxious when the teacher announces the date of a speaking assignment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. When I make a mistake while giving a speech, I find it hard to concentrate on the parts that follow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. During an important speech I experience a feeling of helplessness building up inside me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
31. I have trouble falling asleep the night before a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. My heart beats very fast while I present a speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I feel anxious while waiting to give my speech.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. While giving a speech, I get so nervous I forget facts I really know.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

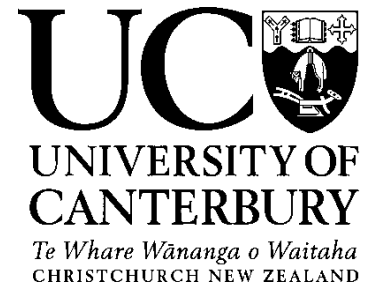
Thank you for filling out this form



## Self-Statement During Public Speaking Scale (SSPSS)

Name \_\_\_\_\_

Date \_\_\_\_\_

☐ Male ☐ Female


The Self-Statements during Public Speaking Scale (SSPS) is a 10-item questionnaire consisting of two 5-item subscales, the positive self-statements and the negative self-statements. Indicate the degree to which the statements apply to you by marking whether you strongly agree, agree, undecided, disagree or strongly disagree with each statement. Work quickly and record your first impression.

Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. What do I have to lose, it's worth a try	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. This is an awkward situation but I can handle it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Even if things don't go well, it's not a catastrophe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I can handle everything	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Instead of worrying I could concentrate on what I want to say	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
6. I'm a loser	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. A failure in this situation would be more proof of my incapacity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. What I say will probably sound stupid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I'll probably "bomb out" anyway	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I feel awkward and dumb: they're bound to notice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for filling out this form ☺

## APPENDIX H

### Behavioral Assessment of Speech Anxiety (BASA)

Name of observer \_\_\_\_\_

Name of participant \_\_\_\_\_

Date \_\_\_\_\_

0 1 2 3 4 5 6 7 8 9

Not at all Slight Moderate Strong

#### Criteria

#### Scale (Please Circle)

Voice	Quivering or tense voice twitches	0 1 2 3 4 5 6 7 8 9
	Too fast	0 1 2 3 4 5 6 7 8 9
	Too soft	0 1 2 3 4 5 6 7 8 9
	Monotonous, lack of emphasis	0 1 2 3 4 5 6 7 8 9

Verbal Fluency	Non fluent, stammers, halting gestures	0 1 2 3 4 5 6 7 8 9
	Vocalised pauses	0 1 2 3 4 5 6 7 8 9
	Hunts for words, speech blocks	0 1 2 3 4 5 6 7 8 9

Mouth and Throat	Swallows	0 1 2 3 4 5 6 7 8 9
	Clears throat	0 1 2 3 4 5 6 7 8 9
	Breathes heavily	0 1 2 3 4 5 6 7 8 9
	Lack of eye contact, extraneous eye movement	0 1 2 3 4 5 6 7 8 9

**Criteria****Scale (Please Circle)**

<b>Facial Expressions</b>	Tense face muscles, grimaces	0 1 2 3 4 5 6 7 8 9
	“Deadpan” facial expression	0 1 2 3 4 5 6 7 8 9

<b>Arms and Hands</b>	Rigid or tense	0 1 2 3 4 5 6 7 8 9
	Fidgeting, extraneous movement	0 1 2 3 4 5 6 7 8 9
	Motionless, lack of appropriate gestures	0 1 2 3 4 5 6 7 8 9

<b>Gross bodily movement</b>	Sways, paces, shuffles feet	0 1 2 3 4 5 6 7 8 9
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<b>Overall</b>	Overall anxiety estimate	0 1 2 3 4 5 6 7 8 9
	Total weighted score	0 1 2 3 4 5 6 7 8 9